The Impact of Office Technology on Job Enrichment and Career Advancement of Office Personnel

by

Janet H. Stevenson

February 1989

Information Society Studies Program

The Impact of Office Technology on Job Enrichment and Career Advancement of Office Personnel

by

Janet H. Stevenson
Associate Professor
Centre for Administrative and Information Studies
Faculty of Social Science
and
Director, Part-Time Studies
Faculty of Part-Time and Continuing Education
The University of Western Ontario
London, Ontario

February 1989

89-05482/

Copyright © 1989 by Janet H. Stevenson. All rights reserved. No part of this report may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the author.

Table of Contents

Acknowledgements vii

Abstract ix

I. Introduction 1
- A. Problem 1
- B. Purpose 1
- C. Scope 1
- D. Limitations 1
- E. Structure of the Report 1

II. Summary of Findings 3
- A. Office Technology 3
- B. Job Enrichment/Job Enlargement 3
- C. Career Advancement 4
- D. Employee Characteristics 5
- E. Organizational Characteristics 5
- F. Correlations Between Independent and Dependent Variables 6
- G. Comment on the Findings 6

III. Conclusions 8

IV. A Strategy for Support Staff 11
- Professional 11
- Responsibility for Self; Risk-Taking 11
- Organization of Alliances and Networks 12
- Management 12
- Planning 12
- Training and Education 12

V. Issues 14
- 1. Issues that Inform the Research Questions 14
  - Conflicting Theories of the "Office of the Future" 14
  - De-skilling 14
  - Job Enrichment and Enlargement 15
  - Career Opportunities 15
  - Management Attitudes and Decision-Making Style 16

2. Selected Related Issues 16
Accurate Forecasting 17
Education, Training and Retraining 17
Role of Unions, Management and Government 18
Attitudes Of and About Working Women 19
Policy-Making 20

VI. Recommendations 21

Appendix 1. Methodology 22
A. Objectives 22
B. The Research Instrument 22
C. Limitations 23
D. Population 23
E. Sampling Procedures 26
F. Data Collection 27
G. Response Rates 28
H. Problems 30

Appendix 2. Findings 32
A. Introduction 32
B. Office Technology – The Intervention 32
1. Definition 32
2. Findings 32
C. Independent Variables 35
1. Employee Characteristics 35
a. Definition 35
b. Findings 35
2. Organizational Characteristics 42
a. Definition 42
b. Findings 43
3. Stages of Technology 46
a. Definition 46
b. Findings 48
D. Dependent Variables 49
1. Job Enlargement and Job Enrichment, Part 1 49
a. Definitions 49
b. Findings 50
2. Job Enrichment and Job Enlargement, Part 2 53
a. Definition 53
b. Findings 55

3. Career Advancement 55
a. Definition 55
b. Findings 55
E. Correlations Between Independent and Dependent Variables 62
1. Introduction 62
2. Findings 62
a. Job Enrichment 62
b. Job Enlargement 63
c. Career Advancement 64

Appendix 3. Discussion and Implications 65
A. Introduction 65
B. Office Technology 65
C. Job Enrichment and Job Enlargement 66
D. Career Advancement 68

Further Appendices
4: The Research Instrument 70
5: Mailing Dates, Table 5.1 86
6: Return Status by Time, Table 6.1 87
7: Return Status by Gender, Table 7.1 88
8: Overview (in Percent) of Frequency of Use for Each Computer Technology or Program in Q-30, Table 8.1 89
9: Overview of Responses by Province, Table 9.1 91
10: Respondent Profile by Job Category, Table 10.1 92
11: Frequencies for Questions in the Secretarial Professionalism Scale, Table 11.1 94
12: Frequencies for Questions in the Profile of Organizational Characteristics, Table 12.1 96
13: Overview of Organizational Characteristics, Table 13.1 98
14: Classifications and Overview of the Scoring Frequencies of Tasks in Q-29, Table 14.1 99
15: Job Enrichment: Percentage Comparison of Mean Scores on the Individual Dimensions of the JDS (Q-27), Table 15.1 100

Bibliography
Part 1: Material Used in Construction of the Research Instrument 101
Part 2: General References 102

Acknowledgements

To the respondents, who took the time and care to complete the lengthy questionnaire and to share their observations and experiences.

To the Canadian Union of Public Employees in general and Marc Bélanger, Technology Officer, in particular, for their active cooperation.

To the following organizations, for allowing access to their subscriber or membership lists:

Association of Administrative Assistants
Association of Information Systems Professionals
Maclean Hunter (publishers of *Canadian Secretary*)
Professional Secretaries International ® (PSI ®)
Department of Alumni Affairs at The University of Western Ontario

To Rensis Likert Associates, Inc., for permission to use the *Profile of Organizational Characteristics*.

To Dr. Judee A. Timm, Department of Business Education, Southern Illinois University at Carbondale, Illinois, for permission to use the *Secretarial Professionalism Scale*.

To Dr. Kathy Speechley, for her perspicacity and persistence in refining the research instrument.

To the Centre for Administrative and Information Studies' staff, Jan Brown and Wendy Bichard, for their forbearance and limitless assistance.

To Heather York-Marshall, Research Assistant, for unflagging diligence, unusual willingness and impeccable capability.

To Labour Canada, Technology Impact Research Fund, for funding the original version of this study.

Abstract

The purposes of the study were: to ascertain the impact of office technology on job enlargement and career advancement of office personnel at clerical, secretarial and administrative levels; and to determine the correlation of three independent variables – employee characteristics, organizational characteristics and stage of technological development – with three dependent variables – job enrichment, job enlargement and career advancement.

The research instrument was a questionnaire mailed in the fall of 1986 to 2497 subjects randomly selected from two groups. The first group was drawn from Canadian mailing lists of five organizations concerned with the secretarial and administrative professions. The second group was drawn from membership lists of 26 locals of the Canadian Union of Public Employees (CUPE). The response rate was 74%, resulting in 30% of usable returns.

The analysis was based on 762 usable responses: 566 non-CUPE respondents who were subdivided into two groups – those with office technology (OT 495) and those with no technology (NT 71) and 196 CUPE respondents who were subdivided into the same two groups: 152 OT, 44 NT.

The most significant finding related to office technology was that the vast majority of all groups were only in Stage 1 of technology – the initial stage which focusses on the mechanization of clerical and office tasks to support secretarial productivity. This finding was corroborated by the fact that 70% of the managers of the respondents did not have a computer.

Although job enrichment and job enlargement (as defined by Rajan) appeared to be occurring simultaneously, only a small inroad into the "enriched" managerial task classifications was observed. Clerical tasks were performed more frequently than either administrative or managerial tasks. For all respondents except CUPE NT, typing/data entry/word processing was the task most frequently performed; answering the telephone ranked second. The reverse was true for the CUPE NT group. The groups with technology were slightly more "enriched" than those without technology, based on an analysis of the tasks they perform. Given the early stage of technology, however, the novelty of the automated equipment has not yet subsided.

The most significant finding related to career advancement was that both measures used to evaluate career advancement confirmed that, for the most part, career advancement in general and career advancement since the introduction of office technology were either non-existent or unfavourable. All groups most frequently responded that they had received no promotion since January 1983 because no position was available.

An overview of the raises received since January 1983 indicated that, with the exception of the CUPE sample, only a small percentage received no raises. The average number of raises was slightly higher for both OT groups, and the percentage receiving no raises was lower for both OT groups. The non-CUPE sample fared better than the CUPE sample.

However, an increase in responsibility without an accompanying promotion was experienced by the majority in all groups. A horizontal move into a different work area without an accompanying promotion occurred for 40% of all respondents. Horizontal moves occurred to a larger extent for the OT groups than the NT groups and for the CUPE sample more than for the non-CUPE sample. Consequently, it seems that office technology has not created vertical career paths.

Of the respondents working in the organization when technology was introduced, 83.7% non-CUPE and 83.2% CUPE indicated that their jobs had not been reclassified since technology was introduced. In most cases, of those reclassified, the reclassification had no effect on employees' opportunities for promotion (46-48%), positively affected those opportunities for others (38-42%) and negatively affected only 6.9% (non-CUPE OT group only). While the majority of the non-CUPE respondents whose jobs were reclassified also received a promotion, this was not the case for the CUPE group.

Moreover, of those respondents working in the organization when technology was introduced, 41.5% of the non-CUPE respondents and 74.5% of the CUPE respondents had no involvement in the decision to introduce technology or in the selection of the kind of hardware or software to be used.

Although caution must be applied in predicting the long-term impact of office technology on the findings of this short-term study, especially given the predominance of the early stage of technology, heed should be taken of the current indicators concerning job enrichment, job enlargement and career advancement to prevent the seeds in Stage 1 from becoming strangling vines in Stages 2 and 3.

Although respondents with technology occupied a relatively better position on an enlargement-enrichment continuum than respondents without technology, a higher percentage of those with technology also experienced unrewarded lateral moves and increased responsibility without accompanying promotions. Whether this is evidence of job enlargement or unrewarded responsibility increase, organizations have exploited these support staff members.

Given these findings, there is a high risk that when the short-term enthrallment with office technology subsides, many support staff members will find themselves performing boring, repetitive tasks with the help of technology, experiencing job dissatisfaction as a result, experiencing a decline in career growth potential, and continuing to be exploited – unless management shows more foresight in planning and managing office technology and related office jobs and careers than seems to have occurred at this point. The role of management is perhaps the most critical element in creating an effective and positive impact of technology on support staff.

Although the CUPE sample was much smaller than the non-CUPE sample (and therefore may not be representative of all CUPE support staff members), in this sample it seems that unionization to date has not made a significant positive difference in the job enrichment or career advancement opportunities of support staff, since the CUPE respondents scored lower on both job enrichment and career advancement, and the job classifications for the CUPE sample were predominantly at the clerical level.

The management system experienced by most non-CUPE respondents was slightly more participative than autocratic, but barely into the participative range. More effective job design and classification could have an impact on job enrichment; job design is the responsibility of management. Hence, the major impact on career advancement will be made by management career planning strategies. A management system that is more autocratic than participative (which seems to have been the case in the CUPE sample) will have a more negative impact on job enrichment and career advancement than will the technology. The management system is a factor over which CUPE or any other union has little control.

If management and unions are not carrying out their responsibilities for career path planning for support staff, the only hope of progress for support staff members is through government intervention

or support staff intervention. However, without the backing of an external power base, support staff may feel powerless to effect such policy changes without risking their job security. The greater risk for Canada's labour force, however, is the exploitation of support staff—whether it be in the form of deskilling, job enlargement or absence of career opportunities.

"The Government of Canada is concerned with ensuring that Canadians secure the greatest economic and social benefits possible from the development and application of technical and scientific knowledge." (Labour Canada, Technology Impact Research Fund leaflet). The findings in this study show that active, positive steps are required if these benefits are to become a reality for support staff. Because support staff positions are primarily filled by women, their future in the labour force stands to feel the greatest impact of office technology. At present, male managers outnumber female managers; the ratio of male to female managers was larger in the OT groups than in the NT groups.

Management, unions, government and support staff must cooperate and communicate and ensure that career advancement and job enrichment for support staff are *planned* features of the office-in-transition and the office of the future. Career path planning must be done now to avoid further exploitation of support staff.

The management system needs to move more in the direction of a participative system versus an autocratic system. Support staff should be given an active role in the decision-making process, especially in the decisions that relate to their jobs and careers, and in decisions involving the implementation of technology. Support staff can only shape their own destiny if they are aware, concerned, informed and involved. Management must be apprised of the relationship of job functions and classifications to job enhancement and career advancement of support staff. More job-related training opportunities, including paid release time and fee compensation for job-related courses, are required for office support staff who do not have technology. Soon the skill gap will become irrevocable. Given the early stage of technology identified in this study, monitoring of job classifications and career opportunities within organizations should begin now. Tomorrow *is* too late.

Although we cannot stop the future, we should create a desirable one. Since decisions by individual managers about the shape of office systems and their impact on the quality of worklife can increase or decrease unemployment, it is critical that we influence management's attitudes and philosophy. It is critical that we influence the structure, direction and management of technological impacts on support staff and the workplace.

I. Introduction

A. Problem

The problem leading to the formulation of the research proposal centered on explaining the discrepancies in the theories, opinions and observations in the literature on the office of the future. Opposing theories view the office of the future as "prison or paradise," as the "technologist's dream" or the "sociologist's nightmare," as "heaven or hell" (Mankin, 1982). Canadian data were needed to validate either theory or to determine whether situational variables exist that support both theories.

B. Purpose

The purposes of the study were: to ascertain the impact of office technology on job enrichment, job enlargement and career advancement of office personnel at clerical, secretarial and administrative levels; to determine the correlation of three independent variables – employee characteristics, organizational characteristics and stage of technological development – with three dependent variables – job enrichment, job enlargement and career advancement.

C. Scope

Since the study focussed on office support staff at the clerical, secretarial and administrative levels, responses from the Canadian Union of Public Employees (CUPE) and *Canadian Secretary* samples that did not fit into this support staff category were not included in the data analysis. The analysis was based on 762 usable responses from 566 non-CUPE respondents and 196 CUPE respondents.

D. Limitations

The major limitation was the narrow timeframe available for the study. A full year was anticipated; however, the grant was issued in July 1986, and the study was given a completion date of March 30, 1987 with no possibility for extension. This limitation was major in that:

a. The questionnaires were mailed in November and December rather than in September as originally planned. This pre-Christmas period retarded the returns.

b. Unanticipated problems that arose during the study severely shortened the time available for the data analysis and interpretation and preparation of the final report.

E. Structure of the Report

Section II provides a summary of the findings; Section III and IV present conclusions and a strategy for support staff.

Section V presents issues that inform the research questions and related issues. Appendix 1 presents various aspects of the methodology, including the objectives of the study, limitations, research instrument, population, sampling procedures, data collection, response rates, problems encountered in the data collection

Appendix 2 defines and examines the findings for the intervention (office technology) and each independent and dependent variable, comparing data for the CUPE and non-CUPE samples. Each sample is subdivided into two groups: those with office technology (OT) and those with no office technology (NT). Following the findings for and analysis of each variable, the correlation of each independent variable (employee characteristics, organizational characteristics, technology stage) with each dependent variable (job enrichment, job enlargement, career advancement) is presented and analyzed.

Appendix 3 discusses the implications of the data. Appendices 4-15 include the questionnaire and additional data.

II. Summary of Findings

A. Office Technology

The most significant finding of the survey was that the vast majority of all the groups were only in Stage 1 of technology – the initial stage which focusses on the mechanization of clerical and office tasks to support secretarial productivity. Of all respondents, 8.5% were in Stage 0 (the pre-technology stage); 83.4% were in Stage 1; 6.6% were in Stage 2 (which shows a shift to providing managerial support) and only 1.6% were in Stage 3 (in which integrated office systems provide both secretarial and managerial support). This finding was corroborated by the fact that 70% of the managers did not have a computer.

Office technology was generally perceived by support staff to be extremely beneficial. The word processor was the most frequently used office technology for all respondents; however, the terminal/mainframe was used most frequently by the CUPE group with office technology (OT). Although the rank order of use differed among groups, the three main technologies used were the word processor, terminal/mainframe and personal computer. With the exception of the word processor and terminal/mainframe, the most frequent response (mode) for all technologies in Q-30 was "not available."

Although there were more respondents using some technology than not using it (OT 647, NT 115), with the exception of the word processor, there were more respondents not using the other two technologies. In the NT groups in both the non-CUPE and CUPE samples, the following technologies were used frequently: telephone/voice store/forward, optical character reader and microform processing.

Of the respondents working in their organization when office technology was introduced, 41.5% of the non-CUPE respondents and 74.5% of the CUPE respondents had no involvement in the decision to introduce technology or in the selection of the kind of hardware or software.

B. Job Enrichment/Job Enlargement

On the basis of a task analysis, respondents with technology occupied a relatively better position on an enlargement-enrichment continuum than respondents without technology.

The survey revealed no obvious examples of either job enlargement or job enrichment. Both seemed to be occurring simultaneously, with only a small inroad into the "enriched" managerial task classifications. Clerical tasks were performed more frequently than either administrative or managerial tasks. Of the ten most frequently performed tasks, only two of them were in the managerial classification (directing others and supervising/training staff).

For all respondents, except CUPE NT, typing/data entry/word processing was the task most frequently performed; answering the telephone ranked second. The reverse was true for the CUPE NT group.

Another measure of job enrichment (which does not include job enlargement) is the Job Diagnostic Survey (JDS) which measures a job's potential for employee motivation and job satisfaction. The results showed most jobs as having potential (mean was 11.12 on a 7-point scale ranging from 2-14). Although there was no definite effect for OT versus NT, results showed the JDS to be significantly lower for CUPE jobs than for non-CUPE jobs.

The non-CUPE OT group showed more managerial "enriched" tasks in the task analysis (even though the total number of enriched tasks was small), a greater distribution of job classifications above the clerical tasks (secretary, executive secretary, administrative assistant, supervisory/ managerial) and scored the highest scores on the JDS and Secretarial Professionalism Scale (SPS) (work satisfaction) of all groups.

C. Career Advancement

The most significant finding related to career advancement was that the two measures of career advancement confirmed that for the most part, career advancement and career advancement since the introduction of office technology were either non-existent or unfavourable.

Although career advancement opportunities were perceived as good in most instances, the CUPE OT group and both NT groups perceived their opportunities inside the organization as being poorer than did the non-CUPE OT and all respondents groups.

All groups most frequently responded that they had received no promotions since January 1983 because no position was available. The majority of the CUPE sample indicated that they were overdue for promotion.

An increase in responsibility without an accompanying promotion was experienced by the majority in all groups (73% of all respondents). A horizontal move into a different work area without an accompanying promotion has occurred for 40% of all respondents. It has occurred to a larger extent for the CUPE sample than for the non-CUPE sample and for the OT groups more than for the NT groups.

Since a higher percentage of the OT groups experienced unrewarded lateral moves than the NT groups, it seems that office technology has not led to vertical career paths.

An overview of the raises received since January 1983 indicated that with the exception of CUPE, only a small percentage received no raises. The average number of raises was slightly higher for both OT groups, and the percentage receiving no raises was lower for both OT groups. The non-CUPE sample fared better than the CUPE sample.

Collective bargaining was the most frequently given reason for raises for the CUPE sample while promotion/job reclassification was the most frequently given reason for the non-CUPE sample. In both samples, a higher percentage of raises was given for promotion/job reclassification in the OT groups than in the NT groups.

Of the respondents working in the organization when technology was introduced, 83.7% non-CUPE and 83.2% CUPE indicated that their jobs had not been reclassified since technology was introduced. In most cases, of those reclassified, the reclassification had no effect on employees'

opportunities for promotion (46-48%), positively affected those opportunities for others (38-42%) and negatively affected only 6.9% of the non-CUPE OT group.

While the majority of the non-CUPE respondents whose jobs were reclassified also received a promotion, this was not the case for the CUPE group.

D. Employee Characteristics

The average respondent was female, born in 1947-48 (39-40 years old), married or cohabiting, had 0-1 dependents, an average salary of $20 000 to $22 000 a year and worked for one manager, usually a male. Some college courses had been completed. All provinces and the Northwest Territories were represented.

The NT groups in both samples have been in their current organizations longer and have had more full-time office experience than the OT groups.

The majority of respondents were in the secretarial and executive secretarial categories in the non-CUPE group. The clerical classification predominated in the CUPE group. The non-CUPE OT group had a greater number of respondents in the managerial/supervisory job classification than did the other groups.

All groups scored high on career orientation, professionalism and work satisfaction (as measured by the Secretarial Professionalism Scale). This was not surprising since half the sample (non-CUPE) was chosen from professionally oriented groups.

Today's applicants for the positions occupied by the respondents would require business, secretarial or community college education in addition to secondary school education. The average number of years of experience required of them would be 3.9, although 5 years was the most frequent requirement.

The average length of time spent in one's current position for all respondents was 5.3 years. The NT groups in both the non-CUPE and CUPE samples (8.4 and 6.7 years respectively) have been in their current position longer than the OT groups. The average length of time spent in one's current organization was 9.1 years. The means for the non-CUPE NT and CUPE NT groups were 11.4 and 13.4 years respectively. The average length of time spent in full-time office work was 15.9 years. Both NT groups have more full-time experience than the OT groups. The non-CUPE OT group has an average of 4.1 years of technology experience and the CUPE OT group has an average of 2.75 years.

E. Organizational Characteristics

Male managers greatly outnumber female managers (75% to 25%). The OT groups had more male managers than the NT groups.

Only 3.9% of all respondents had their work monitored; 61.6% did not belong to a union or other work-related groups with collective bargaining power. Service, public administration and manufacturing were the most prevalent organizational classifications; the most prevalent primary function of a unit/department was general administration.

For all respondents, the average unit/department size was 42; branch size was 35, and organization size was 80. The most frequent response for department size was 3.0; for branch 20-49; for organization 200-499. Metropolitan centres (greater than 500 000) were the most frequently occurring community size.

The survey did not reflect the presence of a totally participative managerial system; however the systems were more participative on the average than autocratic. On a scale of 1 (autocratic) to 4 (participative) the mean score for all groups was between 2.48 (CUPE groups) and 2.81. All groups scored lower on the decision-making dimension than on the other dimensions of the Profile of Organizational Characteristics (POC). For the non-CUPE sample, the OT group was slightly more participative than the NT group. For the CUPE sample, the reverse was true. On every dimension of the scale (leadership, motivation, communication and decision-making) the CUPE NT group scored slightly higher than the CUPE OT group.

F. Correlations Between Independent and Dependent Variables

Although no strong correlations were found between most variables, positive correlations were found between the following:

1. The managerial system and job enrichment (JDS) – as the system becomes more participative, job enrichment increases.

2. Work satisfaction and job enrichment – as jobs are enriched support staff become increasingly satisfied.

3. Secretarial professionalism and job enrichment (JDS).

4. Managerial system and job enlargement – as the managerial system becomes more participative, the task classification moves up from clerical to managerial.

5. Work satisfaction and job enlargement – work satisfaction increases slightly as the task classification moves up from clerical to managerial/as the job becomes less enlarged and more enriched.

6. Stage of technology and career advancement (even though career advancement was unfavourable) – career advancement scores increased as stage of technology increased.

G. Comment on the Findings

Subsequent to the submission of this research report to Labour Canada, the Economic Council of Canada published *Making Technology Work: Innovation and Jobs in Canada*. On topics covered by both studies, for the most part, the ECC's survey results confirm the findings in this report.

For example, both studies:

- Identified the need for and importance of education, training and retraining.

- Identified management deficiencies in terms of participative decision-making style and creative management of technological change and its implications for support staff, although the terminology differs.
- Confirmed the need of all constituencies with a stake in technology to be involved in the decision-making process and stressed the importance of the human side of technology impact.
- Found the initial stage of technology (in which office automation is dominant) to be the prevailing stage at the time of the surveys.
- Recommended that the responsibility for effective technology diffusion accompanied by effective human resource management is one jointly held by employees, management, unions and governments.
- Found job redesign and job enrichment practices to be scarce. (This study's results were more dramatic than those of the ECC.)
- Confirmed that the effect of the impact of technology will depend on **how** the technology is implemented.
- Saw the need for government to play a leadership role.
- Identified the need for ongoing research and information concerning the impact of change.
- The ECC document observed that "older workers may face severe adjustment problems." The data in this study that indicated that older workers in the CUPE sample are often those without retraining opportunities would confirm this observation.

The studies differ primarily on these findings:

- The ECC survey found that personal computers were the "most common application, followed by word processors and computers used for general office applications". This study found the word processor to be the most frequently used office technology for all respondents and for the non-CUPE OT group; the terminal/mainframe was used most frequently by the CUPE OT group.
- The ECC survey found "9 percent of the establishments surveyed in 1985 had introduced . . . [integrated] office networks." This would put these establishments into Stage 3 according to the modified Sumner model used in this report. This study found only 1.6 percent of the respondents in organizations at this advanced stage.
- The ECC survey placed a stronger emphasis on the potential of unions than is suggested in this report.
- The ECC report is "silent" on career advancement for support staff and found that 65 percent of those surveyed had "implemented some form of organizational innovation" – the most common of which involved decision-making methods. This study found that only 9.8 percent of all respondents were in organizations with widespread decision-making.

  However, the ECC study also indicated that while "nearly 30 percent of respondents . . . have joint labour-management committees . . . these committees tend not to have a major participative role, at least with respect to the process of technological change."
- There are differences between the topics dealt with by both studies which is not surprising given their different but overlapping thrusts.

III. Conclusions

The conflicting theories which view the office of the future as "prison or paradise," the "technologist's dream" or the "sociologist's nightmare," or as "heaven or hell" all have the potential to be realized. The findings in this study indicate that the office-in-transition (a more apt descriptor of an environment with office technology than the term "office of the future") exemplifies a parole-like state rather than either prison or paradise. Hopefully, the office-in-transition is not the technologist's dream; it is a sociologist's nightmare with the potential of becoming a dream. Currently, it resembles purgatory more than heaven or hell.

Since the large majority of respondents are working at a Stage 1 level of technology within their office environment, they are exhibiting the usual positive reaction to the technology as they experience and enjoy being relieved of the tedium of retyping and reformatting documents. Although one should use caution in predicting the long-term impact of office technology based on the findings of this short-term study, especially given the predominance of the early stage of technology, heed should be taken of the current indicators concerning job enrichment, job enlargement and career advancement to prevent the seeds in Stage 1 from becoming strangling vines in Stages 2 and 3.

At present, job enrichment (defined as the vertical loading of a job to incorporate cycles of connected tasks and processes) is barely observable. Job enrichment is occurring simultaneously with job enlargement. Evidence points out that support staff have made little progress in becoming members of the management team or part of the decision-making process or in achieving more supervisory responsibilities.

Although respondents with technology received more raises and occupied a relatively better position on the enlargement-enrichment continuum than respondents without office technology, a higher percentage of those with technology also experienced unrewarded or lateral moves and increases in responsibility without accompanying promotions. Whether this is evidence of job enlargement or unrewarded responsibility increase, organizations have exploited these support staff members. Vertical career paths have not been created.

Given these findings, there is a high risk that when the short-term enthrallment with office technology subsides, many support staff members will find themselves performing boring, repetitive tasks with the help of technology, experiencing job dissatisfaction as a result, experiencing a decline in career growth potential, and continuing to be exploited – unless management shows more foresight in planning and managing office technology and related jobs and careers than seems to have occurred at this point.

Currently support staff job classifications, for the most part, do not reflect the incorporation of technology. (The categories "computing – clerical" and "computing – professional" that emerged from the study are less than imaginative job classifications and point to no observable career path.) Job classifications are the responsibility of management.

Given the correlations between management system and job enlargement and enrichment, and between job enrichment and work satisfaction, Rajan's projection that the impact of technology will depend more on how the change is managed than on the technology itself has foundation. That foundation is further validated by the comparisons between the non-CUPE OT group and the CUPE

OT group that emerge from the descriptive statistics: in the non-CUPE OT group, the management system was less autocratic and more participative; job enrichment and work satisfaction were higher. The reverse was true in the CUPE OT group.

When even a small percentage of "enriched" tasks and managerial/supervisory job classifications co-exist with a management system that is more participative than autocratic, the job's potential for motivation and job satisfaction as measured by the JDS and work satisfaction as measured by the SPS #2 shows very positive scores at Stage 1 of office technology (as demonstrated by the non-CUPE OT group). However, when no enriched tasks exist along with a predominance of job classifications at the clerical level and a less participative management system, the job's potential for motivation and job satisfaction as measured by the JDS and SPS #2 shows less positive scores at Stage 1 of technology (as demonstrated by the CUPE OT and NT groups).

The two measures of career advancement used in this study confirm that career advancement in general and career advancement since the introduction of technology are either non-existent or unfavourable. The statement that job enrichment leads to administrative skill development and career growth potential is borne out by the descriptive statistics: the non-CUPE OT group with more administrative and managerial tasks in their jobs also scored highest (albeit very low) on the career advancement score (CA_1). While it is the case that more career advancement has occurred for support staff members who use office technology, the level of career advancement is still at the neutral and unfavourable stage on the career advancement scores. Although there is evidence of the potential for increased career advancement with higher stages of office technology, there is cause for concern: since career advancement scores are unfavourable at Stage 1, there is a risk that the potential will not be realized.

Although the CUPE sample is much smaller than the non-CUPE sample (and therefore may not be representative of all CUPE support staff members), in this sample it seems that unionization to date has not made a significant positive difference in the job enrichment or career advancement opportunities of office support staff, since the CUPE respondents scored lower on both job enrichment and career advancement, and the job classifications for the CUPE sample are predominantly at the clerical level.

Although a more effective job design could have an impact on job enrichment, the major impact on career advancement will be made by management career planning strategies. A management system that is more autocratic than participative (which seems to be the case in the CUPE sample) will have a more negative impact on job enrichment and career advancement than the technology will. The management system is a factor over which CUPE or any other union has little control.

While it is true that an organization cannot have all managers and no staff, it can have decision-making and project teams to which support staff can contribute and in which administrative and managerial activities and processes can be developed and applied. This is the kind of "vertical loading" of tasks that produces job enhancement. When job classifications which differentiate the vertically loaded support staff position from the horizontally loaded position are devised, a career path for support staff will emerge. The key factors are planning and training, both of which form the path between the horizontal and the vertical.

Career advancement planning for support staff is an active process not a passive one. If management and unions are not carrying out their responsibility for career path planning for support staff, the only hope of progress for support staff members is through governmental intervention or

support staff intervention. However, without the backing of an external power base, support staff may feel powerless to effect such policy changes without risking their job security. The greater risk for Canada's labour force, however, is the exploitation of support staff—whether it be in the form of deskilling, job enlargement or absence of career paths.

The literature indicates that it is critical that the labour force share in the shaping of managers' attitudes, philosophy and decision-making processes, especially as they affect support staff jobs and careers. However, shaping others' decisions and attitudes requires knowledge and information. As an isolated individual, one is often ignorant of the possibilities for change. Support staff members can be their own worst enemy—partly because of the naivety of some people concerning how organizations work; partly because they are so busy earning a living that they do not see the broader picture or the signals that should put them on red alert but which go unnoticed. The signals turned on by the findings in this study could be used to inform and sensitize management and all personnel involved. Support staff can only shape their own destiny if they are aware, concerned, informed and involved.

Informed support staff can participate more fully in the decision-making process. It will take informed support staff members to be able to influence the planning and decision-making process to ensure that quality of work and career advancement opportunities are *planned* features of the office-in-transition as well as the office of the future.

"The Government of Canada is concerned with ensuring that Canadians secure the greatest economic and social benefits possible for the development and application of technical and scientific knowledge" (Labour Canada, Technology Impact Research Fund leaflet). The findings in this study show that active, positive steps are required if these benefits are to become a reality.

Because office support staff positions are primarily filled by women, their future in the labour force stands to feel the greatest impact of office technology. Although we cannot stop the future, we should create a desirable future. Job enrichment and career advancement can be enhanced if support staff can proact in a positive way, initiate changes, develop and steer career strategies, influence management's thinking and influence the structure and direction of technological impacts on people and on the workplace.

IV. A Strategy for Support Staff

The data in the study together with the issues related to the research suggest the following strategy to enable support staff to influence the impact of technology on their career advancement and job enrichment and ultimately contribute to the technological position of their organization.

The strategy, entitled the PROMPT strategy, consists of the following components:

P Professional image and behaviour

R Responsibility for self; risk-taking

O Organization of alliances and networks

M Management's need to seek participative decision-making

P Planning – influence planning of technological implementation and career paths

T Training/education

Professional

Professional starts with how support staff look, perform and act. A very simple yet understated strategy is "Look ready for success." (Dight, 1987) Manifesting a helpless attitude or intimidated behaviour, coupled with unprofessional dress and performance reinforce management's perception of a support staff member and mitigate against advancement.

Professional means taking initiative and building the skills needed in every management position: people skills, communication skills, analytical skills and technological skills. Professional also means being aware and informed: aware of the total organization, informed about technology. Office workers can begin their awareness by reading professional periodicals that pertain to management, administration and technology such as: *Office Technology and People*, "Impact Alert," *Words*, *Management World*, *Training*, *Canadian Secretary*, the *Journal of the Office Systems Research Association* to name a few. These are non "techie" journals presented in straightforward prose. There are many others.

Responsibility for Self; Risk-Taking

If it is the case that we receive the "services, treatment and attitude" that we are willing to accept and that as much as we would like to blame our lot on others, we are ultimately responsible for our own destiny (Fenelon, 1980), office support staff need to assume that responsibility now; they need to take a proactive approach as individuals and groups working positively within the structures of their own organization.

If job reclassifications, planning, training, participative decision-making and joint implementation strategies are not occurring, office personnel should recognize this as a signal that they may be in a deadend job *now* or being exploited by management.

Looking out for oneself in an enlightened manner is nothing to be ashamed of (Kleiner, 1980) but it does require initiative and risk-taking. The greater risk for Canada's women, however, is the exploitation of support staff – whether it be in the form of deskilling, career path deficit, lack of career advancement or job enrichment.

Organization of Alliances and Networks

Organizing alliances and networks within one's own organization and with other organizations in the community creates an information and possible power base. It takes initiative, organization and time to build a network, but anyone with the skills to organize a home and family can organize a network. Often a network of professional women exists in a community and can be tapped readily.

Organizing a meeting with one's supervisor is an effective first step in sharing concerns with management. The approach to influencing management's decision-making need not be confrontational. Take a problem-solving, cooperative approach, working through the supervisory channels, to enable support staff to meet with management to determine how to assist in the technology transition. Employees have considerable leverage here: management does need their cooperation to make the technology work effectively.

Management

Management must become more participative and learn how to manage the transition in a way that minimizes the negative impact on people. Management must seek support staff involvement in matters related to support staff jobs, careers and futures.

To encourage such participation, support staff can initiate a "technological change committee", (Cohen and White, 1987) involving staff at all levels, to discuss and explore all aspects of change. Study and assess appropriate career paths; recommend alternative career paths, redesigned jobs and alternative classifications to management.

Planning

Planning must start now – not just for the technology and its implementation but for the social and employment implications for employees – implications for their changing roles, responsibilities, careers, training – to avoid further exploitation of support staff. Planning can be raised as an important issue for the technological change committee to discuss.

Training and Education

Training and education have been identified as known needs of a technological society, regardless of job, gender, organization or economy. Real access to job enrichment and career advancement depends on training, education, skill levels and abilities – for women and men.

Employees who seek training or retraining can exert positive leverage on the organization. Such an approach gives management a favourable opportunity, both in terms of a good public relations

image and in terms of attracting a government subsidy for retraining. In addition, if women can negotiate retraining for themselves, there is no need for office employees to unionize (worth pointing out to management) if they can achieve their objectives through positive collaboration and cooperation with management.

Many universities have a mature applicant entry status that involves no entry test and does not require high school graduation. Some universities, colleges and learning centres offer credit (degree or professional credit) studies by correspondence. Part-time study is available in most colleges and undergraduate programs in universities.

Development of support staff's full career and technological potential is tantamount to developing the full potential of every business and organization in Canada. Development of that support staff potential will result in a positive influence on the structure and direction of technological impacts on women and on the workplace.

V. Issues

1. Issues that Inform the Research Questions

The following issues directly inform the research questions:

- Conflicting theories of the "office of the future"
- De-skilling
- Job enrichment and job enlargement
- Career opportunities
- Management attitudes and decision-making style

Conflicting Theories of the "Office of the Future"

The literature contains two conflicting theories which view the "office of the future" as "prison or paradise," as the "technologist's dream" or the "sociologist's nightmare," as "heaven or hell" (Mankin et al., 1982).

On the one hand, office technology promised to enrich office jobs by removing the drudgery of routine, repetitive tasks, by creating career advancement opportunities and by enabling office personnel to become members of the management team. This theory suggests that employees are able to achieve a higher standard of product and a greater degree of involvement in creating the total product and in the organization as a whole (Cecil, 1980). As a result, the job is more varied, complete and rewarding.

On the other hand, the centralization/rationalization theory states that office automation results in a higher degree of job specialization and fragmentation so that the office worker never sees the total product and has little knowledge of the organization as a whole. This can lead to "boring jobs with limited scope for learning and initiative" (Bjorn-Andersen, 1983). It is perhaps very pertinent to note that Cecil provides no bibliography or concrete evidence to support her contention that the job enrichment/career advancement theory is really happening.

De-skilling

Menzies indicates that the quality of work is decreasing as specialization into single function jobs such as word processor operation increases. The result of this specialization is a decrease in the employee's composite skills and hence a decrease in career path opportunities (Menzies, 1981). Others report "wholesale de-skilling" (Belanger, 1983; Evans, 1982). Although de-skilling is referred to in the literature at length, the extent to which it is taking (or has taken) place is not clearly understood.

Job Enrichment and Enlargement

Rajan (1985) indicates "There is little doubt that enlargement and enrichment are occurring alongside the loss of job specific skills.... Far from de-skilling them (clerical jobs), new technology can be viewed as their liberator. However, this is not to imply that its impact is predetermined – far from it. Much depends on foresight and planning on the part of management."

Job enrichment, which Rajan describes as a "vertical loading because it makes employees responsible for a whole cycle of connected tasks," potentially contributes to job satisfaction, administrative skill development, and career growth potential. In contrast, while job enlargement ("horizontal loading" which expands a job with unconnected tasks) may provide interest in the short term, when the novelty of the equipment wears off, it can lead to increased pressure caused by boring, repetitive tasks (Bjorn-Andersen, 1983) and ultimately to job dissatisfaction, possible exploitation of an employee and decline in career growth potential. Job enlargement is restrictive and focusses on production of documents; job enrichment is developmental and focusses on origination/creation of documents.

Career Opportunities

The office worker is described as "a professional whose abilities and talents are of increasing importance to the operations of the organization; such an individual can participate on a high level within the organization and seek promotions and salary increases" (Cecil, 1980). A study co-sponsored by Professional Secretaries International and the Minolta Corp. Business Equipment Division "shows secretaries are enthusiastic about automation and see it as a way of freeing them from dull, repetitive office tasks. The same study shows secretaries are becoming members of the management team with more supervisory and decision-making responsibilities" (Heitman, 1985). But a study of Canadian Pacific Railway's automation program indicates that even though 110 new professional/managerial employees were hired, "only 2 of the 130 displaced clerical workers moved up to the professional-managerial ranks" (Menzies, 1981).

Are the supervisory and administrative positions which used to be filled by personnel who rose through the clerical and line operations ranks now being filled by the "new professionals" (Menzies, 1981)? Or are organizations moving to more decentralized operations which involve less need for supervision and hence offer fewer "administrative" positions for office personnel? (Duff and Merrier, 1984) Or is the problem an organizational one? Duff and Merrier (1984) indicate that the trend toward decentralized word processing "stymied career pathing." However, they also indicate:

> small organizations have completely ignored career planning, and many large organizations – including those which used centralized and decentralized word processing clusters – have been reluctant to establish job classifications and salary schedules for people engaged primarily in word processing activities. Once again, the path to management has been blocked.

The greatest impact of office technology will be on women. For some reason, women are often perceived as "incapable of moving in any direction other than down" (Dickey, 1982) or out. At the Canada Tomorrow Conference, 1983, Monica Townson asked what has to be done to ensure that the "information economy that micro-technology is making possible will not push women back behind that first frontier?" (The "first frontier" is the initial step out of the home to take on paid employment.) She identified the involvement of women in the planning process as the first step toward enabling them to determine the nature and extent of their involvement. This step is critical when one realizes

that "the impact on skills depends on how the change is managed and not on the inherent features of the new technology" (Rajan, 1985).

Management Attitudes and Decision-Making Style

Because the attitudes of managers will determine the technological directions and initiatives they recommend, it is important that their attitudes be shaped appropriately. The two predominant attitude sets and their resulting directions are outlined in Landau (1982) as follows:

a. Systems Analytic: Managers taking this path have negative views of individuals, focus on streamlining tasks and making individuals more productive. Result: increased unemployment, threat to the well-being and security of personnel, little real impact on productivity.

b. Humanistic: Managers taking this path have positive views of personnel, focus on functions, groups, units and their effectiveness; focus on the quality of worklife. Result: decreased unemployment; beneficial impact on health; increased productivity.

Decisions by individual managers about the shape of office systems and their impact on the quality of worklife—"when added up across the country"—can increase or decrease unemployment (Driscoll, 1982). Therefore, it is critical that we shape the attitudes and philosophies of managers, thereby exerting more control over our work environment.

There is urgency in shaping our technological destiny. In 1980, the fight to prevent the negative impact of office technology on office workers was seen as a "race against time" (Working Women, 1980). Monica Townson at the Canada Tomorrow Conference in 1983 said that "we ignore the Science Council's warning at our peril. 'Tomorrow is too late.'"

Since we have a choice in the kind of office environment and structure which is created, and since that choice is a "social decision, not a technical one" (Evans, 1982), that social decision should be informed and influenced by qualitative and quantitative data.

2. Selected Related Issues

Although the following issues do not inform the research questions directly, they are important factors that relate indirectly to this research report:

- Accurate forecasting
- Education, training, retraining
- Role of unions, management and government
- Attitudes of and about working women
- Policy-making

Accurate Forecasting

Accurate forecasting is difficult, complex, and depends on many variables such as how well the economy performs, knowledge of how the new technologies affect employment, rate of technology diffusion, and how the profits generated by increased productivity are shared (Economic Council of Canada, 1987).

Although current forecasting models, such as the Canadian Occupational Projection System (COPS), are deficient in enabling the forecasting of exact employment needs, we can forecast skill sets, abilities and expertise that will be required regardless of the office position or the specific technology based on current knowledge.

Education, Training and Retraining

We KNOW that:

- The least educated people will experience the most negative effects of technological change.
- Employers will require basic literacy – computer, technological, functional – computational and communication skills.
- Workers who want to avoid obsolescence need to be adaptable, flexible, ready to learn new skills and shift gears at a moment's notice.
- Management's skill repertoire includes: good oral and written communication skills; facility in budgeting and budget analysis; analytical and decision-making skills; human relations skills; knowledge of the total organization, the total market and economy.
- Many employment areas already face a skill shortage. (*The London Free Press*, February 24, 1988 documents a shortage of 2500 skilled workers by 1991 in Ontario alone in the machinery and equipment manufacturing fields.)
- A college education, and in many cases, a university education is required for more and more jobs.

Consequently, despite deficiencies in forecasting, we know that training and education will be required for employment and economical survival to a much greater extent than ever before.

Respondents in the study indicated that today's applicants for the office positions currently held by the respondents would require business, secretarial or community college education in addition to secondary school education. Indeed, to be hired for a clerical position at IBM Canada, a university degree is required (Cohen and White, 1987).

Ongoing learning opportunities to enable support staff to develop broad skill and knowledge repertoires, beyond the immediate technological needs, will provide organizations with the most productive, capable and adaptable employees. The responsibility for training and education of employees should be shared among the worker, union, management and government – federal and provincial. Greenbaum (1985) provides a useful analysis and recommendations for successful training models appropriate for training office workers in technology.

Organizations can be flexible, innovative in terms of working hours, affirmative action and job sharing, but real access to job enrichment and career advancement depends on training, education, skill levels and abilities.

Education needs to begin long before employment or training. Elementary and secondary school teachers and guidance counsellors need to be educated away from sex role stereotyping in teaching and counselling so that young girls are *socialized*, not just encouraged, to expect to attend college or university; to expect to excel in math and science as well as in language and the arts; to consider and be made aware of non-traditional educational and career opportunities (Dumas, 1985).

It would clearly be to the advantage of employees, management, unions and governments to adapt the concept of lifelong learning (referred to as "continuous learning" by the Economic Council of Canada, 1987) proposed for decades by adult education professional associations and university continuing education units not only to alleviate the training gap during the office-in-transition but also to maintain appropriate educational/training levels in future. Moreover, management and union personnel could benefit from updating their own knowledge concerning effecting appropriate organizational change, managing technology and human resource development.

Role of Unions, Management and Government

Although the union sample in this study was small (and therefore may not be representative of all CUPE support staff members or all support staff unions), the data in this sample indicate that unionization of office staff to date has not made a significant, positive difference to job enrichment or career advancement opportunities of support staff. In fact, the CUPE respondents scored lower on both job enrichment and career advancement scores; the job classifications for the CUPE sample were predominantly at the clerical level; opportunities for retraining, reclassification and promotion were poorer than in the non-CUPE sample.

In addition, in ***Making Technology Work***, the Economic Council of Canada indicates that while "there are some examples in Canada of employers and unions negotiating many aspects of innovation to their mutual benefit.... In the final analysis,... there is not a great deal of collective bargaining on technological change and its impact."

Unions should have the legal structures and resources to enable clerical workers to take control of the work settings (Cohen and White, 1987). While this may well be the case, one questions whether they have the knowledge and ability. Moreover, unions are in the business of protecting clerical positions, not in the business of "queenmakers"—creating management positions and career paths for women. As a result (and from the data in this study), there is reason to doubt that unions can do more for office employees vis-à-vis technology transition and career opportunities than office employees can do for themselves if they take a more proactive approach to their careers. Indeed, Landau suggests that unions "use technological paths as a guide to their organizing efforts. Employers who pursue the current systems analytic trend in office automation will do more to increase membership among office workers than will the women's movement."

Support staff will experience a decline in career growth potential and continue to be exploited unless management becomes more participative in its decision-making style and shows more foresight in planning and managing office technology and its related jobs and careers than seems to have occurred to date. Indeed the success of technological change for Canada depends as much on Canadian

management's ability to "become more creative in applying technology, in deploying human resources, and in combining technical and human resources" as on technical expertise itself (Economic Council of Canada, 1987).

If unions and management are not taking responsibility for career path planning for support staff, the only hope of progress for support staff is through their own intervention and government encouragement. Although "there is virtually no support for the concept of industrial democracy among Canada's trade union leaders," (Lowe and Krahn, 1984) support staff might well investigate the beneficial components of this model, especially since the majority of support staff in Canada are not unionized.

It is not the prerogative of governments to run businesses but neither should they allow unions, businesses and women themselves off the hook in terms of taking responsibility for developing women's potential in the workplace. Otherwise, management and unions will let government take the blame. It is government's mandate to be enabling, stimulating and encouraging in terms of attitude, example and creation of programs and opportunities.

In the area of equal employment opportunity, for example, government encouragement of affirmative action strategies to improve work opportunities for women by removing barriers to their advancement is to be lauded as are such programs as Canadian Job Strategies. Since some of the CJS options such as the extended leave option have not had a high "take-up rate" (ECC, 1987), it behooves the government to find out why this is the case. It may stem from a management block in which the importance of training or retraining is not understood or accepted by current managers.

It is government's responsibility to improve access to these programs by increasing employees' awareness of existing job strategies and making the strategies more acceptable and attractive to employers.

The Economic Council of Canada's Statement confirms the first recommendation in this report that in the final analysis, the participation of everyone with a vested interest in technological change—employees, unions, management and governments—is required to achieve "effective technological and organizational innovation."

Attitudes Of and About Working Women

While greater equality of opportunity is required for women who *want* to advance in the workplace, one must not make the false assumption that every woman wants to strive for the top or should want to do so. Women who wish to concentrate their efforts and abilities on other levels of employment or "home management" should not be regarded as second-class citizens for doing so. In reality, the numbers of positions at the top are limited and are more highly competitive—for both men and women.

Working with technology from the home can be a viable option for women, depending on their goals. However, a goal of success and advancement in an organization requires visibility and team work not home work. Working from the home can also foster isolation, anonymity and ghettoization similar to that of the word processing pool in an organization.

Affirmative action, while basically an enabling feature for women, is not a perfect solution. Women are not always available or prepared for the areas in which there is an affirmative action program. This situation often results in accusations of reverse discrimination, creating a negative attitude toward women's abilities.

Do office support staff really care about a career path? In this study respondents scored high on professionalism, work satisfaction and career orientation, yet they scored unfavourably on the career advancement scores. Perhaps they are still enthralled with the early advantages of technology but don't care about career advancement opportunities. Perhaps their sense of professionlism gives them a sense of job satisfaction despite career path deficit or they may be content if their reason for working is for a second income. Perhaps the "debate" about career paths and advancement is academic.

Policy-Making

In the view of the Economic Council of Canada, "Canada lacks the explicit national commitment to new technologies and the cohesive framework of policies that must accompany such commitment." (ECC, 1987)

In the context that exhorts all Canadians to "openly embrace the new technologies," (ECC, 1987) all Canadians become policy-makers. As the foregoing issues imply, individuals taking the initiative within their organizations to prompt management to modernize its decision-making style and its knowledge of human resource and technology planning are influencing management and organizational policy. In turn, management's ability to adapt to the changing needs of employees and organizations will establish new policies for organizational design and human resource strategies. Enlightened unions have the potential to influence and share the policy-making as do teachers, counsellors and professors.

To facilitate and encourage the creation of effective policies by those groups, Canada's governments need to articulate and effect public policy initiatives that enable them to be successful. Next to the overall policy of the adoption of technology, the most critical public policy issue for employees and management is education and training and supportive access to them for both groups (ECC, 1987). Only through appropriate funding mechanisms and educational programs for individuals, managers, organizations and educational institutions will the required education and retraining ensue.

VI. Recommendations

1. Management, unions, government and support staff should communicate, co-operate and ensure that career advancement and job enrichment for support staff are planned features of the office-in-transition and the office of the future.

2. Career path planning must be done now to avoid further exploitation of support staff.

3. Support staff should be given an active role in the decision-making process, especially in the decisions that relate to their jobs and careers, and in decisions involving the implementation of technology.

4. Management must be apprised of the relationship of job functions and job classifications to job enhancement and career advancement.

5. The management system needs to move more in the direction of a participative versus autocratic system, using a humanistic rather than a systems analytic approach.

6. More job-related training opportunities, including paid release time and fee compensation for job-related courses, are required for office support staff who do not have technology. Soon the skill gap will become irrevocable.

7. Office support staff should be encouraged to proact rather than react in their own organizations as individuals and groups working within the context of their organization to find out how technology will affect their career advancement opportunities and their job functions and to analyze the job classifications and career paths within their organizations so that they can devise strategies to assist management in planning.

8. CUPE's job classification system and task activities need reassessing to remove the "bottom loading" of clerical tasks and classifications and to provide career advancement opportunities and job enrichment for employees.

9. Given the early stage of technology identified in this study, monitoring of job classifications and career opportunities within organizations should begin now.

10. Since Stage 2 and 3 of technology are in existence in Canada, a two-stage follow-up study should be conducted to compare these Stage 1 findings at higher stages.

11. Because the impact of office technology needs to be studied in various contexts over longer periods of time than most currently existing research granting agencies fund, Labour Canada should establish a long-term impact study research grant wherein longitudinal studies can be carried out as organizations move through the various stages of technology. Such a grant should not require a joint proposal from management but should be free from such encumbrance to facilitate objective studies.

Appendix 1. Methodology

A. Objectives

The objectives of the study were:

1. To determine the impact of office technology on job enrichment, job enlargement and career advancement of office personnel at clerical, secretarial and administrative levels.

2. To determine the correlation of the above dependent variables with the following independent variables:

   a. Organizational characteristics, such as structure, size, type, managerial style and gender.

   b. Employee characteristics, such as professionalism, career objectives, demographic characteristics, work experience and technological experience.

   c. Stage of technological development within the organization.

B. The Research Instrument

The research instrument was a 61-question questionnaire mailed to 2497 subjects randomly selected from two populations: members of the Canadian Union of Public Employees (CUPE) and a non-CUPE population described in Section D. Population.

The questions were designed to gather the following data:

1	General question on the effect of computer technology on office workers
2-6	Job characteristics
7-10	Employee characteristics – work experience
11-14	Organizational characteristics
15-16	Employee characteristics – job related study and unionization
17-21	Perception of career paths
22-26	Career advancement
27	Job enrichment (JDS)
28	Professionalism (SPS)
29	Job enlargement – tasks, activities and functions
30	Stages of technology
31	Employee characteristics – Technology experience
32-33	Job enlargement – computer tasks
34-39	Stages of technology
40-41	Employee's participation in the introduction of technology
42-46	Career advancement
47	Perception of career paths
48-52	Organizational characteristics
53	Community size

54	Organizational structure and managerial style (POC)
55-61	Employee characteristics (demographic)

See Appendix 4 for a copy of the questionnaire.

C. Limitations

Given the curtailed timeframe for the project and the necessity of mailing the questionnaire before the Christmas mail peak period, a search for existing instruments to measure the variables was severely hampered, and the required time to develop and pre-test appropriate new instruments was non-existent.

Existing instruments were available for only three variables: the Job Diagnostic Survey (JDS) Q-27 for job enrichment; the Secretarial Professionalism Scale (SPS) Q-18 for professionalism; the Profile of Organizational Characteristics (POC) Q-54 for organizational structure and managerial style.

Owing to the number of variables examined and the unavailability of existing research instruments in most instances, the questionnaire was longer than desirable.

Time constraints did not allow the measurement of dependent variables in two timeframes—before and after the introduction of technology. However, to compensate for the study's inability to make longitudinal comparisons, the questionnaire ascertained the availability and current level of technology for each respondent enabling a comparison to be made of the dependent variables between those respondents with office technology and those without.

Finally, there was a tendency for some respondents to reply selectively, leaving missing data.

D. Population

The population for this study was composed of two major groups. The first group was drawn from Canadian mailing lists of five organizations concerned with the secretarial and administrative professions. The second group was drawn from the membership lists of 26 locals of the Canadian Union of Public Employees whose executive committees agreed to participate in this study. Table 1.1 lists the organizations, the number of individuals belonging to each organization, and the sample size chosen for each organization.

Each of the groups in the sample had a certain number of members who were not in the secretarial or administrative professions. A summary of reasons given for not filling in the questionnaire is shown in Tables 1.2 and 1.3. The leading reason given was "belong to another occupation." For non-CUPE groups, the predominant occupation was teaching followed by management. The most frequent response given by CUPE members was social work.

The greatest number of blank returns (Not Applicable = N/A) occurred in the CUPE locals: 483 questionnaires from CUPE locals (38.73% of the entire CUPE sample) were returned with the indication that the subject was not a member of office support staff (Table 1.4, Summary of N/A Cases for CUPE and Non-CUPE).

Table 1.1
Composition of Survey Population

A.	Non-Cupe Organization	Total Number	Sample Size (15.4%)
1	*Canadian Secretary* subscriber list	4420	681
2	Association of Administrative Assistants	320	49
3	Association of Information Systems Professionals	952	146
4	Professional Secretaries International	1850	284
5	SAS Alumni (UWO)	587	90
	Non-CUPE total	8129	1250

B.	Cupe Local	Total Number	Sample Size (16.7%)
6	Local 79 (City of Toronto)	3457	577
7	Local 500 (City of Winnipeg, Clerical Unit)	1056	176
8	Local 23 (City of Burnaby)	802	134
9	Local 287 (St. Catharines)	591	99
10	Local 1978 (B.C.)	254	42
11	Local 1698 (Fraser Valley Public Library)	195	32
12	Local 2329 (Newfoundland Public Libraries)	79	13
13	Local 410 (Greater Victoria Public Library)	69	11
14	Local 2220 (St. Catharines Public Library)	58	10
15	Local 1002 (Manitoba)	46	8
16	Local 2826 (Wilkie, Saskatchewan)	23	4
17	Partial Lists from 10 locals	110	18
18	Local 2105 (Cité de la Santé de Laval)	498	83
19	Local 1296 (Ecoles catholiques de Québec)	201	34
20	Local 2231 (CTCUQ)	57	9
	CUPE Total	7496	1250

Table 1.2
N/A Questionnaires (Not Filled in):
Reasons Given for not Filling in Questionnaires

Reason	Total Cases	Total %	Non-CUPE Cases	Non-CUPE %	CUPE Cases	CUPE %
Retired	32	27.1	27	33.8	5	3.2
Ill	2	1.7	2	2.5	0	0.0
Formerly but not currently in administrative work	7	5.9	4	5.0	3	7.9
Belong to another occupation	77	65.3	47	58.8	30	78.9
TOTAL N/A's giving reason	118		80		38	

Table 1.3
Summary of Other Occupations for N/A Group

Occupation	Total Cases	Non-CUPE Cases	CUPE Cases
Blank	5	2	3
Clerks	6	2	4
Day Care Teachers	2	0	2
Dental Assistants	3	0	3
Homemakers	3	3	0
Managerial/Supervisory	10	10	0
Sales	3	3	0
Social Workers	5	0	5
Students	2	1	1
Teaching (Subject Unspecified)	6	6	0
Teaching (Office Related)	14	14	0
Miscellaneous	18	6	12
Total Other Occupations	77	47	30

Table 1.4
Summary of N/A Cases for CUPE and Non-CUPE

GROUP	Total N/A	% of Group Sample	% Which Gave Reason
NON-CUPE	240	19.20	33.33
CUPE	483	38.73	7.87
TOTAL	723	28.95	16.32

A high rate of N/A's was anticipated by the researchers, having been informed by CUPE's Technology Officer (the study's contact with CUPE) that the locals would not be able to provide the study with a list of office support staff only. In most cases the study received names and addresses of all members with no indication of job title. The few cases in which job title or unit was given will be discussed in Section E, Sampling Procedures.

E. Sampling Procedures

It had previously been decided that samples of 1250 each would be chosen from the two populations (non-CUPE and CUPE) described in the previous section.

As funding for the project was finalized and a draft questionnaire became available for examination, non-CUPE groups that had already been approached were requested to make their Canadian mailing lists available to the study. At the same time, CUPE's Technology Officer sent a request to participate in the study to all CUPE locals previously identified as having been affected by technology. A cut-off date of October 31 was established for the study to receive membership lists from participating CUPE locals. (It was necessary to allow time for local executives to vote on participation.) As lists were received, checks for duplication were carried out among all lists. While a full duplicate check was performed among non-CUPE groups, the CUPE groups were spot-checked against non-CUPE groups, since an initial check found no duplicates.

After the cut-off date the names on all mailing lists were numbered. In some cases names on mailing lists were not counted. In the case of the subscription list for *Canadian Secretary*, names that could be determined as not being office support staff were not counted. The majority of these were librarians, teachers and professors. Entries which included no name or title were also excluded.

CUPE Local 500 (City of Winnipeg) gave the study a separate list of Clerical Unit members, 70% of these being clerical workers. For this local only members from the Clerical Unit were used; those from the other units were excluded.

CUPE Local 23 (District of Burnaby) distinguished between inside and outside workers on its membership list so that we were able to exclude outside workers from our sample.

CUPE Local 40 (Cité de la Santé de Laval) and 1296 (La Commission des écoles catholiques de Québec) included job titles on their membership lists. Members with obviously inappropriate job titles (e.g. infirmier/infirmière) were excluded from the sample.

After the lists were numbered, the percentage of names from each population that would be required to get a sample of 1250 for each was calculated: 15.4% for non-CUPE groups and 16.7% for CUPE locals. (See Table 1.1.) For each mailing list, a number of random numbers equal to twice the size of the sample required (taking into account that duplicate numbers would appear) was generated using the random number facility in Accent-R. An Accent-R routine deleted the duplicate numbers in the list, then deleted extra numbers, and finally sorted the list (which at this point had only the required number of random numbers).

Entries on each mailing list corresponding to the random number list were marked and entered into the master mailing list file on a word processor.

F. Data Collection

Construction of the questionnaire began on July 29, 1986 with preliminary discussions between the principal investigator, the research assistant, and the questionnaire assistant. A search for scales to measure the central variables in the study was started at this time. A preliminary version for pre-testing and review was prepared by September 12, 1986. The final version, incorporating suggestions from reviewers, was ready for printing on December 31, 1986.

A French translation of the preliminary versions was prepared by September 30, 1986. The translation of the final version was ready at the end of November. Typesetting and printing took up an additional three weeks. The French language version was ready for mailing on December 22, 1986.

In addition to the original questionnaire and cover letter, three reminder mailings were carried out. The first was a post-card thanking those who had already responded, and asking those who hadn't to please do so. The card was mailed about ten days after the questionnaire. About two weeks later the first reminder letter was mailed, followed about a month later by the final reminder which contained a replacement questionnaire.

Mailing dates for questionnaires and follow-ups are given in Appendix 5 (Table 5.1).

A cut-off date for returns of March 31, 1987 was established. This was later adjusted to March 23 to allow more time for analysis. Table 6.1 (Appendix 6) shows the number of questionnaires received at each stage of the mailing schedule for non-CUPE and CUPE groups. By the time the first reminder letter was mailed, over 46% of total responses had been received (34% of all questionnaires mailed). By the time the second reminder letter was mailed, almost 83% of all responses had been received (61% of all questionnaires mailed).

Coding of questionnaires began on February 17, 1987 and was completed on March 24. Programming for the analysis of data started on February 10, 1987 and was completed on April 6, 1987.

G. Response Rates

Table 5.1 shows the return status of all questionnaires at the cut-off date, March 23, 1987. A total of 1840 questionnaires (73.69% of questionnaires mailed) were returned. Of these, 938 (50.98% of all returns) were not completed because:

a. the subject was not a member of office support staff;

b. the subject refused to complete the survey;

c. the subject had died; or

d. the Post Office was unable to deliver the questionnaire.

The rate of "Not Returned" questionnaires was approximately 5% higher for the CUPE sample than for the non-CUPE sample. This was to be expected since:

a. CUPE members were less likely to be office workers than the non-CUPE members of the sample; and

b. Because of mailing delays to Local 79 (Toronto) and the delay caused by translation of the French-language questionnaire, the mailing schedules of these groups lagged behind that of the non-CUPE groups and the remainder of the CUPE sample.

The higher rate of completed questionnaires returned by the non-CUPE sample (22.34% higher than the CUPE sample) can be explained again by the lower proportion of office workers in the CUPE sample, and, to a lesser extent, by the delayed mailing of some CUPE questionnaires.

The reasons for the higher rate of "Not Applicable" responses (38.73% of all CUPE questionnaires) have been discussed in Section D. Population. Of the non-CUPE sample, 28.95% were also in the "Not Applicable" category, that is, did not fill in the questionnaire and checked the "not a member of office support staff" box. The reasons vary across the five groups making up this sample:

a. *Canadian Secretary* subscriber list. Since this magazine is offered in 'package deals' with other magazines, some of the subscribers have no connection to office work. Approximately 15% were "Not Applicable."

b. Association of Administrative Assistants. Many of the members of this group reported being retired. Approximately 28% were "Not Applicable."

c. Association of Information Systems Professionals. This association includes a much broader range of members than office support staff alone, which explains the comparatively high rate of 35% "Not Applicable" responses.

d. Professional Secretaries International: Only 13% of this group, composed mainly of secretarial personnel, answered "Not Applicable."

Table 1.5
Return Status

Status	Total Sample		Non-CUPE Sample		CUPE Sample	
	No. of Cases	% of Total	No. of Cases	% of Group Total	No. of Cases	% of Group Total
Not Returned	640	25.63	266	21.28	374	29.99
Completed Reurns	889	35.60	574	45.92	315	25.26
Not Applicable	750	30.04	257	20.56	493	39.53
Refused	9	.36	5	.40	4	.32
Deceased	5	.20	3	.24	2	.16
Undeliverable	204	8.17	145	11.60	59	4.73
Total	2497	100.00	1250	100.00	1247*	99.99

*Note: 3 Questionnaires were not mailed since addresses of subjects were not available.

e. Alumni of the Secretarial and Administrative Studies Programme, U.W.O. A very high proportion, approximately 50%, of this group's responses were not completed, "Not Applicable" questionnaires, since many have moved beyond support work, usually to managerial or professional work.

Five members of the non-CUPE sample and four members of the CUPE sample returned questionnaires saying they were not interested in participating in the study. Five members of the overall population were deceased.

The "Undeliverable" rate was much higher for the non-CUPE sample than for the CUPE sample: this can be explained by the fact that union locals would be in more frequent contact with their members.

Table 1.6 shows the usable returns as a percentage of all returned questionnaires and of completed returns. Of the 902 questionnaires completed, 767* (84.8%) were considered by the researchers to be usable. The remainder were excluded on the basis of inappropriate job title and/or tasks. (That is, the respondent did not work as office support staff.) Most of the excluded questionnaires were from CUPE locals, since there was a lower proportion of office workers in the CUPE sample. Excluded questionnaires were coded and key-punched for possible later use, but were not included in the analysis.

* Five of the usable returns arrived after the deadline for analysis, so that only 762 cases were included in the analysis.

Table 7.1 (Appendix 7) shows the return status of all questionnaires by gender on April 15, 1987. Over 82% of completed questionnaires were from women, with about 10% from men and 8% unknown. Of the "Not Applicable" questionnaires (most of which were not completed), 54.4% were from women, 35.33% from men and 10.27% unknown. Almost 58% of the unreturned questionnaires were addressed to women, 29% to men and 13% to persons whose gender was unknown.

Table 1.6
Usable Returns as a Percentage of Returned Questionnaires

	Usable Returns	Completed Returns		All Returns	
		Total	% Usable	Total	% Usable
Non-CUPE	566	591	95.77	983	57.58
CUPE	196	311	63.02	857	22.87
Total Sample	762	902	84.48	1840	41.41

H. Problems

The first major problem encountered, the location of tested research instruments to use in the questionnaire, has already been discussed in Section C. Limitations.

The process of checking mailing lists for duplicates was made more difficult and time-consuming by the fact that mailing lists received from participating organizations were sorted in different orders: some were sorted by postal code; some by province, then postal code; some by name. Many CUPE lists were presented in several sections, each sorted separately. The postal code sort which predominated made it possible to miss duplicates with home address on one list and work address on another, especially in large cities. (One subject did receive one questionnaire at home and another at work – she returned the second questionnaire with an explanatory note.)

Because of time constraints a pre-test of the final version of the questionnaire on a sample from the survey population was not carried out. This resulted in the following problems:

a. A typographical error in a skip instruction was not found until the questionnaires were printed and the first group had been mailed. To remedy this error, a label carrying a corrected instruction was applied to all questionnaires subsequently mailed, and the French language version was corrected before it was printed. A small number of respondents still seemed confused about the instruction, skipping some questions which should have been answered.

b. It was not realized until the mailing was completed that the instruction to return the questionnaire without filling it in if the recipient was not a member of office support staff

was not sufficiently visible. As a result the researchers received many telephone calls from subjects in this category, and many subjects simply ignored or destroyed the questionnaire. Final reminder letters to non-respondents emphasized this instruction. Non-respondents from the groups with a later mailing schedule received a card which they could check and return if they did not belong to office support staff.

The sampling process was delayed by about a week since the Professional Secretaries International organization would not release their mailing list to the study until they received a final version of the questionnaire, to ensure proper use of their trademarks. A telephone estimate of total membership proved different from the actual numbers when the list arrived, making it necessary to re-calculate the sample sizes for all non-CUPE groups.

CUPE Local 79 (Toronto) specified that all mailings to its members were to be posted from its offices. Owing to a misunderstanding about the exact reason for this stipulation, envelopes destined for Local 79 members were already metered. Questionnaires had to be unpacked from the metered envelopes, repacked into addressed but unmetered envelopes, and sent by courier to Local 79 for sealing and mailing. While waiting for confirmation that Local 79's postage meter could handle the bulky envelopes, an error in a skip instruction (described earlier in this section) was discovered. The mailing was further delayed while a corrected instruction was composed, printed on labels, and affixed to the questionnaires (at the time of repacking).

A few Francophone members of non-CUPE groups requested French-language versions of the questionnaire. (These requests were complied with.) As well, a few Francophone respondents reported difficulty in understanding and interpreting the questions in the English-language version. These problems could have been avoided by including an offer to send French-language questionnaires to those requesting them, at the time of the first mailing. Since the translated version was not yet available, this offer was not made.

Appendix 2. Findings

A. Introduction

Parts B to D of this section focus on descriptive statistics of the intervention and the variables, comparisons between the non-CUPE and CUPE samples, and comparisons within the samples between those with technology (OT) and those with no technology (NT). Part E focusses on correlations between the independent and dependent variables.

Analysis is based on 762 usable responses: 566 non-CUPE (495 OT, 71 NT), 196 CUPE (152 OT, 44 NT).

B. Office Technology – The Intervention

1. Definition

Office technology, for the purposes of this study, was defined as "interactive computer tools which are put in the hands of individual knowledge workers, at their desks, in the areas in which they are physically working" (Uhlig, Farber and Bair, 1979). The questionnaire used the term "computer-related technology" which was defined as "word processors, computers, computer terminals or electronic equipment." (See Question 30.)

2. Findings

Is office technology beneficial? The most frequent response for the population and the CUPE sample with office technology (OT) was "extremely beneficial." However, as shown in Table 2.1, the most frequent response for the CUPE NT group was "somewhat beneficial." A larger percentage of the CUPE NT group than the non-CUPE or total respondents group indicated that technology was "somewhat harmful" or "extremely harmful."

The word processor is the most frequently used office technology for all respondents and the non-CUPE OT group. However, the terminal/mainframe is used most frequently by the CUPE OT group. Figure 2.1 shows the relative use of the four major technologies by all respondents, the non-CUPE OT and CUPE OT groups. Although the three groups use a computer outside the organization less frequently than the other three technologies, there is variation in the ranking of the first three technologies in Figure 2.1.

A comparison of all respondents, the non-CUPE and CUPE samples in Table 2.2 shows the percentage using the four technologies and the percentage of these groups not using the four technologies. Although more CUPE respondents use technology (N = 152) than do not use it (N = 44), Table 2.2 shows that of the four technologies listed, there is a higher percentage of CUPE members NOT using each technology than using it. However, for all respondents and the non-CUPE sample, there are more respondents using a word processor than not using it. The percentages not using the other three technologies are consistent with the CUPE sample in being greater than the percentage using them.

Table 2.1
Frequency of Response to Q-1 in Percentages: Is Office Technology Beneficial

Response Categories	Non-CUPE OT (N = 495)	Non-CUPE NT (N = 71)	CUPE OT (N = 152)	CUPE NT (N = 44)	All Respondents N = 762
Extremely beneficial	73.8*	60.0*	53.7*	31.0	66.1*
Somewhat beneficial	23.6	34.3	40.8	45.0*	29.2
Neutral	1.8	4.3	4.1	11.9	3.1
Somewhat harmful	0.6	1.4	0.7	7.1	1.1
Extremely harmful	0.2	0.0	0.7	4.8	0.5
	100.0	100.0	100.0	100.0	100.0

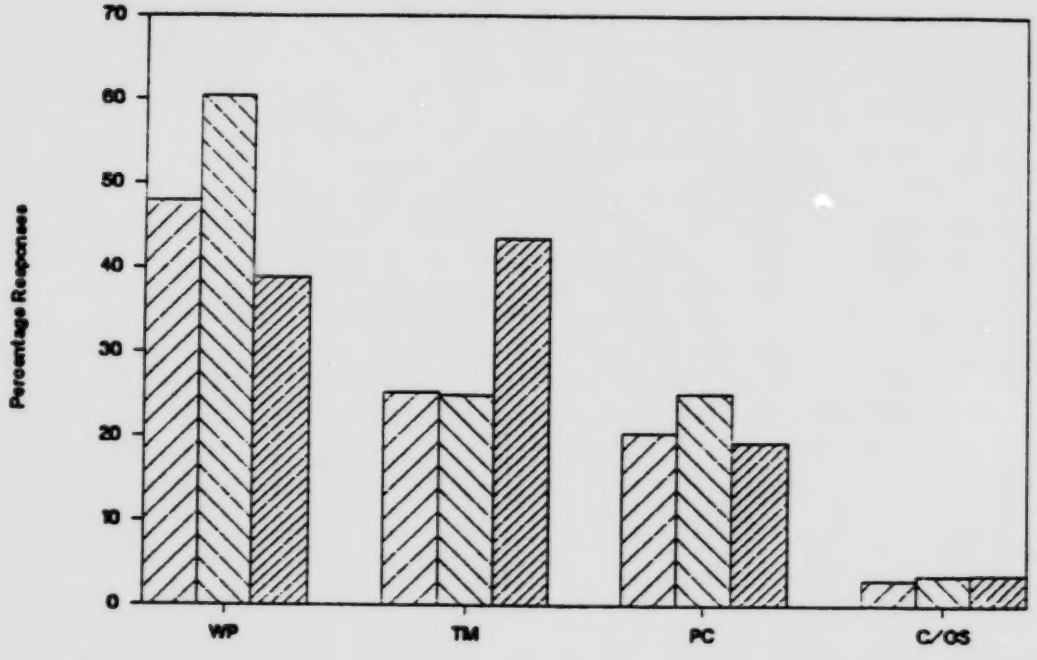
*Mode

Table 2.2
Frequency of Use of Four Top-Ranking Technologies Shown by Percentage of the Population and Samples

Technology in Rank Order of Use by N = 762	% Using Techonolgies* All Respondents N = 762	Non-CUPE N = 566	CUPE N = 196	% Not Using Technologies N = 762	Non-CUPE	CUPE
Word Processor	67	74	47	33	26	53
Terminal/Mainframe	41	38	48	59	62	52
Personal Computer	40	43	32	60	57	68
Computer Outside	12	13	9	88	87	91

* "Use " is determined by the number of responses in the "use frequently" and "use sometimes" columns of Q-30.

Figure 2.1
Percentage Responding "Use Frequently" for Computer Technology in Q-30



WP - Word Processor
TM - Terminal to Mainframe
PC - Personal Computer
C/OS - Computer Outside Organization

The most frequent response (mode) for all technologies in Q-30 (with the exception of word processor and terminal/mainframe) for all groups was "not available." The mode response for the word processor for all groups was "use frequently." The mode response for terminal/mainframe for all respondents and the non-CUPE sample was "not available," whereas in the CUPE sample, the mode was "use frequently." (Table 8.1 in Appendix 8 shows an overview in percent of frequency of use for each computer technology and program listed in Q-30.)

The overview in Appendix 8, Table 8.1, also shows that computer conferencing was the only technology program not used by anyone in the CUPE OT group. In the NT components of both the non-CUPE and CUPE samples, the following were used frequently: Telephone/voice store/forward, optical character reader and microform processing. In addition, the non-CUPE NT group used FAX.

C. Independent Variables

1. Employee Characteristics

a. *Definition*

The survey gathered data on the following employee characteristics:

i.	Job characteristics	Q-2 to 6
ii.	Length of work experience	Q-7 to 10
iii.	Length of technology experience	Q-31
iv.	Demographic information	Q-55 to 59
v.	Education level	Q-60 to 61
vi.	Professionalism/career objectives	Q-28 (SPS), Q-14 and 15

b. *Findings*

The average respondent was female, was born in 1947-48 (39-40 years old), was married or cohabiting, had 0-1 dependents, earned an average salary of $20 000 to $22 000 and worked for one manager. Some college courses had been completed. All provinces and the Northwest Territories were represented.

Slightly higher levels of educational and work experience were required for current office positions by the non-CUPE sample. The NT group in both samples have been in their current organization longer and have had more full-time office experience than the OT groups.

Word processing experience exceeded both mainframe and computer experience for all respondents and the non-CUPE sample. The CUPE sample has had more mainframe experience than the others.

The non-CUPE OT group had a greater number of respondents in the managerial/supervisory job classification than the other groups. The majority of respondents were in the secretarial/executive secretarial categories except in the CUPE group where the clerical classification predominated. The average salary for the non-CUPE OT group and all respondents was higher ($20 000 to $22 000) than for all other groups ($15 000 to $19 999).

All groups scored high on career orientation, professionalism and work satisfaction (as measured by the Secretarial Professionalism Scale).

For an overview of responses by province and a profile of respondents by job classification (using the mode), see Appendices 9 and 10.

i. Job Characteristics

The most frequently used title for the entire sample was "secretary" as shown in Table 2.3. For the non-CUPE sample (both OT and NT) "executive secretary" was the most common title; for the CUPE sample (both OT and NT groups) "clerk" was the most common job title. Seven major job title groups emerged from the survey into which individual job titles were fit. The preponderance of clerical titles in the CUPE sample stems from the classification systems used by the organizations by whom the CUPE respondents are employed.

Table 2.3 indicated that more employees fall into the supervisory-managerial classification in the non-CUPE OT group than in any other group, including the entire respondent group. There is a more even distribution of employees in the secretarial, administrative assistant and managerial classifications in the non-CUPE OT group than in any other groups.

Questions 3 and 4 surveyed the minimum educational and experience qualifications required of an applicant for the employee's current position. As shown in Table 2.4 the educational requirements and number of years of experience for all subjects and non-CUPE subjects were slightly higher than for the CUPE subjects. Experience in office, administrative or secretarial work ranked first for minimum experience, with word processing next for all but the CUPE OT group which put more emphasis on computing experience than word processing experience.

All groups except the non-CUPE OT group (40 hours) worked 35 hours per week. Of the non-CUPE sample and all respondents, 96-98% were permanent employees. Of the CUPE sample, 92% were permanent in the OT group, and 89% in the NT group.

Although the most frequent response to the number of managers per support staff member was 1, the mean for each group was as follows:

	All Respondents (N = 762)	Non-CUPE		CUPE	
		OT	NT	OT	NT
Mean	1.25	2.27	2.30	2.80	2.30

In the CUPE OT group, support staff work for more managers than in the other groups.

ii. Level of Work Experience

As Tables 2.5 and 2.6 show, there is quite a large variation between the mode and the mean for the length of time spent in the respondent's current position and in the current organization.

Table 2.3
Overview of Frequency of Job Titles Q-2

Q-2 Job Title for Current Position	% of All Respondents (N = 762)	% of Non-CUPE OT (495)	% of Non-CUPE NT (71)	% of CUPE OT (152)	% of CUPE NT (44)
Clerk	19.6	5.5	8.5	57.9	63.6
Secretary	22.8	23.6	28.2	18.4	20.5
Executive Secretary	21.4	27.1	32.4	2.6	4.5
Administrative Assistant	18.0	21.2	21.1	9.9	4.5
Supervisory – Managerial	16.1	21.0	9.9	5.9	6.8
Computing – Clerical	1.2	0.4	0.0	4.6	0.0
Computing – Professional	0.9	1.2	0.0	0.7	0.0
	100.0	100.0	100.0	100.0	100.0

Table 2.4
Frequencies of Minimum Requirements and Years of Experience Required for Current Jobs, Q-3 and Q-4

	Minimum Education Experience	N = 762	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
1.	None	0.3	0.2	0.0	0.0	2.3
2.	Secondary school graduation	25.3	17.3	23.2	47.3	47.7
3.	Business, sec. or community college	60.6	66.5	65.2	44.7	40.9
4.	Some university courses	7.7	9.6	8.7	2.7	2.3
5.	University degree	5.2	5.9	2.9	4.0	4.5
6.	Other	0.7	0.4	0.0	1.3	2.3
	Years of Experience					
	Mode (No. of Years)	5.0	5.0	5.0	2.0	2.0
	Mean (No. of Years)	3.9	4.2	4.3	2.9	3.4

Table 2.5
Length of Time in Current Positions – Modes and Means

	All Respondents	Non-CUPE		CUPE	
	N = 762	OT	NT	OT	NT
Range of Years	1-41	1-31	1-41	1-24	1-33
Mode (No. of Years)	1.0	1.0	1.0	1.0	1.0
Mean (No. of Years)	5.3	5.0	8.4	4.8	6.7

Table 2.6
Length of Time in Current Organization – Modes and Means

	All Respondents	Non-CUPE		CUPE	
	N = 762	OT	NT	OT	NT
Range of Years	1-41	1-36	1-41	1-25	1-32
Mode (No. of Years)	2.0	2.0	8.0	2.0	2.0
Mean (No. of Years)	9.1	8.6	11.4	8.5	13.4

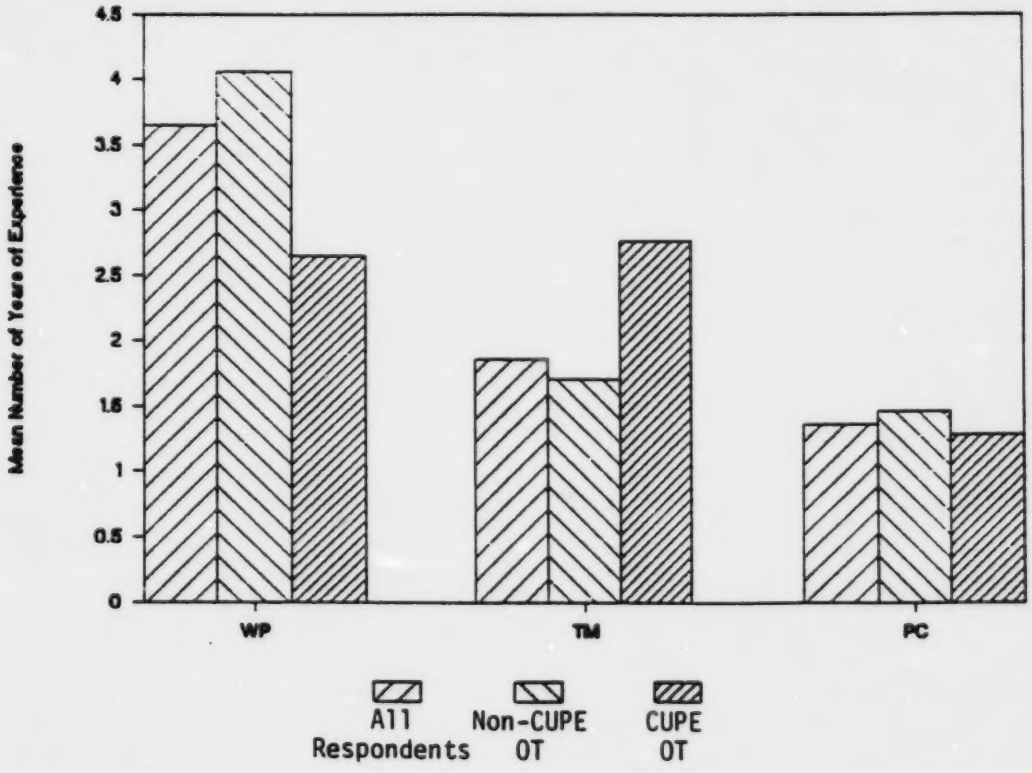
The NT groups in both the non-CUPE and CUPE samples have been longest in the organization. However, when compared for job classification (see Table 2.3) the majority of the CUPE NT group are in the clerical classification while the majority of the non-CUPE group are in the executive secretary classification.

A comparison of the number of years spent in full-time office work indicates that the mean for N = 762 is 15.9 years; 16.2 years for the non-CUPE OT groups; 19.1 for the non-CUPE NT group; 12.9 for the CUPE OT group; 17.7 for the CUPE NT group. In both the non-CUPE and CUPE samples, the NT groups have more full-time office experience than the OT groups. Most respondents in all groups work for one manager. However, the average number of managers was slightly over one for all respondents and slightly over two for the others.

iii. Length of Technology Experience

As Figure 2.2 indicates, the non-CUPE OT group has the most word processing experience (mean = 4.1 years); the CUPE OT group has more terminal/mainframe experience (mean = 2.75 years) than the non-CUPE group or the entire sample. There is little variation in the mean responses for personal computer experience (mean slightly over one year) for the groups.

Figure 2.2
Mean Years of Technology for all Respondents and the Non-CUPE and CUPE OT Groups



iv. Demographic Information

Female support staff formed 97% of the entire respondent group, 99% of the non-CUPE group and 90.1%/86.4% of the CUPE OT/NT groups. Males in the CUPE sample were primarily in the clerical or computing classifications. Between 62-65% of respondents in all groups were in the marital/common-law relationship status. The single status (18-25% in all groups) ranked second.

A large majority of respondents (61-75%) in all groups had no dependents; 10-15% had one dependent. The mean year of birth was 1947-48; the years of birth occurring most frequently for each group are as follows:

All respondents (N = 762):		1954
Non-CUPE	(a) OT:	1954
	(b) NT:	1940
CUPE	(a) OT:	1957
	(b) NT:	1954

The $20 000 to $24 999 salary range was selected most frequently by all but the non-CUPE NT group for whom the $15 000 to $19 999 range was most frequent. The mean salary across all respondents and for the non-CUPE OT groups was between $20 000 and $22 000; the mean salary for the non-CUPE NT groups was between $20 000 and $22 000; the mean salary for the non-CUPE NT and both CUPE groups was between $15 500 and $19 999, with the CUPE NT group at the lower point in the range. See Q-59 in Appendix 4 for the response categories.

v. Educational Level

The most frequent response to Q-60 for highest level of education was "completed high school" for all groups except the non-CUPE OT group for whom the mode response was "some college." The average respondent in all groups had completed some college courses. In Q-61, 1980 was the most frequently occurring year in which the highest degree was completed with the exception of the two NT groups. The non-CUPE NT group mode was 1969 and the CUPE NT group mode was 1968.

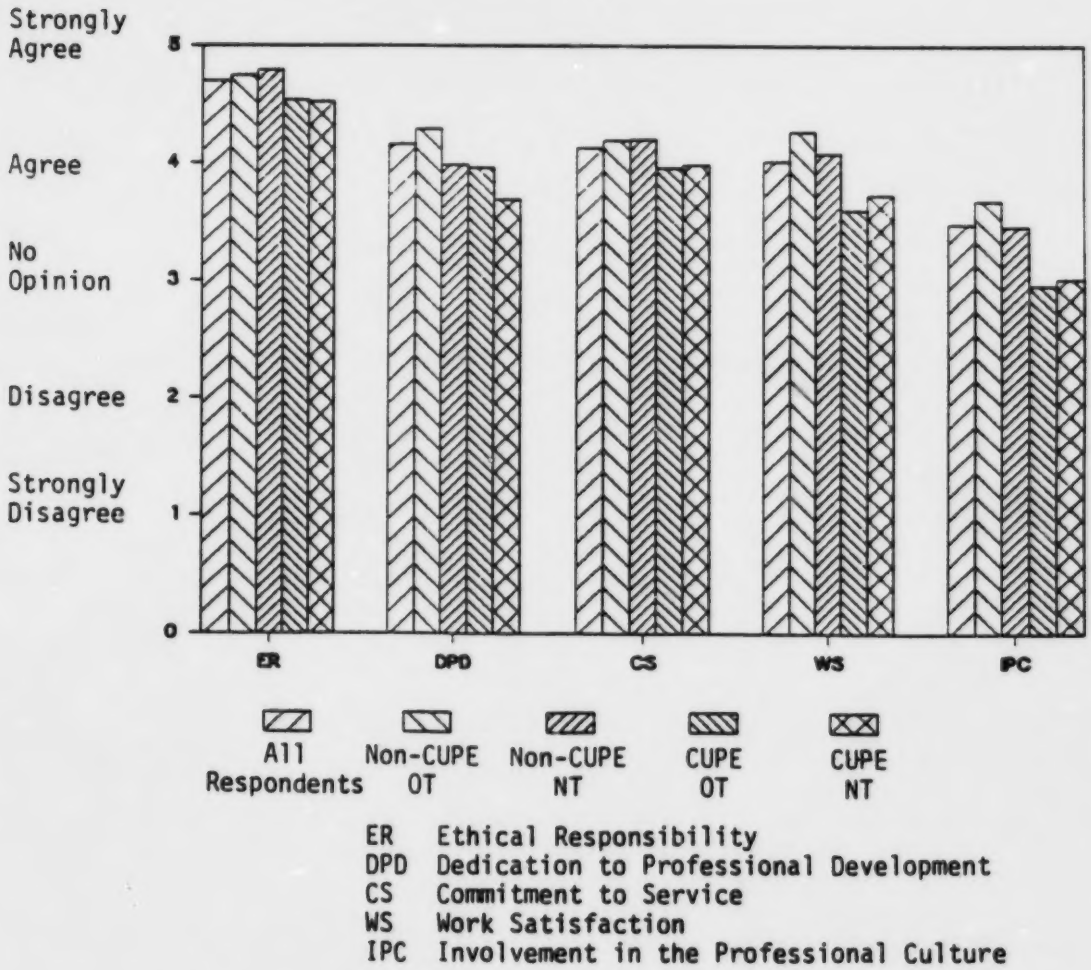
vi. Professionalism

Timm's Secretarial Professionalism Scale (SPS) was used in Q-28 to measure level of professionalism and level of work satisfaction. The SPS measures five dimensions: Involvement in the Professional Culture, Commitment to Service, Dedication to Professional Development, Ethical Responsibility, and Work Satisfaction. The first four dimensions can be combined into a career orientation score; all five dimensions are combined for an overall professionalism score.

This population scored high on career orientation with a mean score of 4.12 on a 5-point scale and high on work satisfaction with a mean score of 4.01 to give an overall professionalism score of 4.07. Since half the sample (the non-CUPE respondents) was selected from professionally oriented groups, the high score is not surprising; however, it may not be representative of all people working in the occupational groups being studied. See Appendix 11, Table 11.1 for the frequencies for all questions in the SPS for the total population.

Figure 2.3 shows small variation among the components, with ethical responsibility scoring the highest and involvement in the professional culture scoring lowest for all groups. Although the non-CUPE sample scored slightly higher on all dimensions than the CUPE sample, there is very little difference between the OT and NT groups.

Figure 2.3
Mean Scores on Components of the Secretarial Professionalism Scale



As an additional measure of professionalism and career orientation, respondents were asked in Q-15 if they enrolled in any job-related courses. As Table 2.7 indicates, the majority of all groups (except the CUPE NT group) enrolled in job-related courses. The CUPE NT group may not have enrolled because the majority of that group did not receive paid time off for job-related courses.

Both the NT groups have fewer opportunities for paid time off and for course fees than the other groups.

Table 2.7
Comparision of Learning Opportunities Available and Used Shown as a Percentage

	All Respondents	Non-CUPE		CUPE	
Description	N=762	OT	NT	OT	NT
Q-14 Paid time off for job-related courses					
No	26.4	22.7	37.7	27.6	47.6
Yes pay own fee	6.0	5.7	10.1	4.1	9.5
Yes fees paid by org.	67.6	71.6	52.2	68.3	42.9
Q-15 Enrolled in Job-related courses					
No	31.5	26.1	39.4	37.7	59.1
Yes	68.5	73.9	60.6	62.3	40.9

2. *Organizational Characteristics*

a. *Definition*

The survey gathered data on the following organizational characteristics:

i.	Gender of managers	Q-12
ii.	Monitoring of Work	Q-13
iii.	Compensation for job-related courses	Q-14
iv.	Member of union	Q-16
v.	Classification of organization and primary function of department/unit	Q-48
vi.	Size of department, branch,organization and community	Q-50-52
vii.	Organizational structure and managerial style	Q-54 (POC)

b. *Findings*

Male managers greatly outnumbered female managers in this study's sample. Only 3.9% of all respondents had their work monitored. Of all respondents, 61.6% did not belong to a union or any other work-related group with collective bargaining power. Service, public administration and manufacturing were the most prevalent organizational classifications; the most prevalent primary function of the unit/department was general administration.

For all respondents, the average unit/department size was 42; the average branch size was approximately 80. Metropolitan centres (greater than 500 000) were the most frequently occurring community size.

The sample did not reflect the presence of a totally participative managerial system; however, the organizations described by respondents are, on average, more participative than autocratic.

i. Gender of Managers

Male managers outnumbered female managers in the entire sample. The distribution was closer in the CUPE sample as Table 2.8 indicates. The percentage of male managers was higher in the OT groups.

Table 2.8
Gender of Managers as a Percentage of all Respondents and the Non-CUPE and CUPE Samples

	All Respondents	Non-CUPE		CUPE	
Gender	N = 762	OT	NT	OT	NT
Male	75.0	81.6	77.5	57.6	56.8
Female	25.0	18.4	22.5	42.4	43.2

ii. Monitoring of Work

Very little monitoring has taken place; with the exception of the CUPE OT group where 8.7% were being monitored, less than 3.9% of the other respondents indicated the presence of monitoring.

iii. Compensation for Job-Related Courses

The majority received paid time off and had their fees paid for job-related courses with the exception of the NT group; 47.6% of this group received no paid time off and only 42.9% had their fees paid by the organization.

iv. Member of a Union

Respondents were asked whether they personally belonged to a union or to any other work-related group with collective bargaining power. Of the total population, 61.6% answered "no"; of the non-CUPE groups, over 80% answered "no."

v. Classification of Organization and Primary Function of Unit

The three most frequently identified organizational classifications in Q-48 were service, public administration and manufacturing. "Transportation, communications and other utilities" replaced manufacturing for the CUPE groups. The relative rankings by group are shown in Figure 2.4. The primary function of the unit was general administration for the non-CUPE groups and health for the CUPE groups.

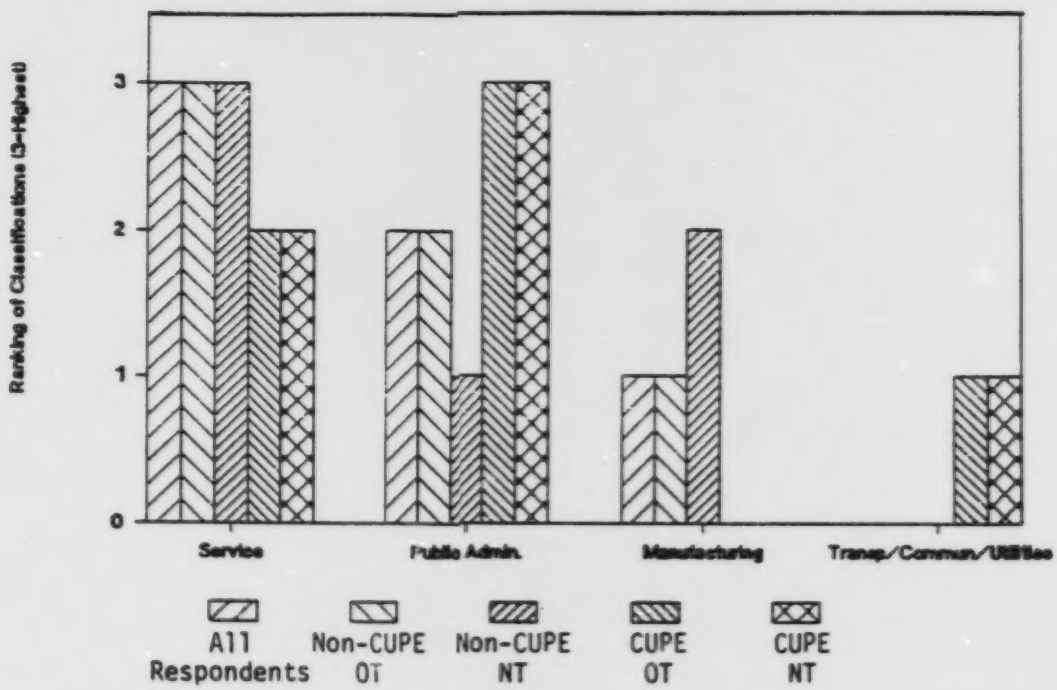
vi. Size of Unit, Branch, Organization and Community

The average unit/department size ranged from 24 to 79; the average branch size ranged from approximately 20 to 35 and the average organization size ranged from 50 to 225 across all groups. Metropolitan centres with more than 500 000 in population were the most frequently occurring community size, with the exception of the non-CUPE NT group for which the medium-size community (30 000-99 999) was the mode response. Table 2.9 shows an overview of the department, branch and organizational sizes by group.

Table 2.9
Overview of Sizes of Unit, Branch and Organization Shown by Modes and Means

	All Respondents	Non-CUPE		CUPE	
Description	N = 762	OT	NT	OT	NT
No. in unit					
Mode	3.0	2.0	3.0	4.0	7.0
Mean	42.0	32.8	23.5	79.0	57.8
No. in branch					
Mode	20-49	20-49	100-199	20-49	20-49
Mean (approx.)	35	35	20	20	25
No. in org.					
Mode	200-499	200-499	200-499	200-499	500-799
Mean	80	75	50	130	225

Figure 2.4
Four Most Frequent Organizational Classifications as a Percentage of All Respondents and the Non-CUPE and CUPE Samples



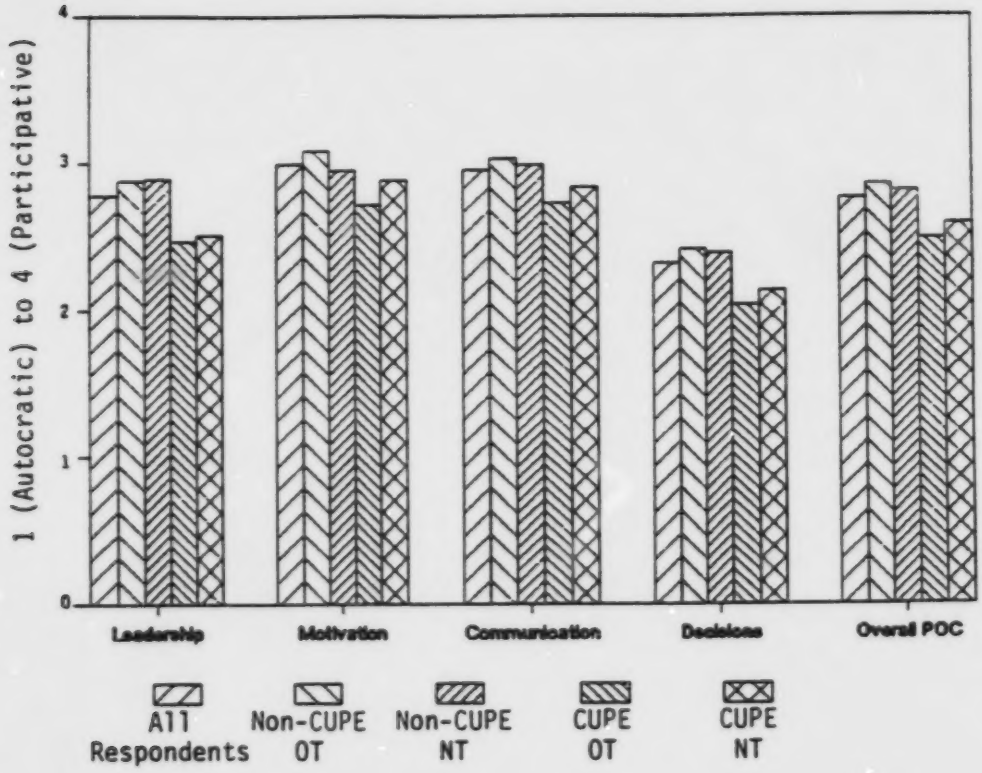
vii. Organizational Structure and Managerial Style (POC)

The Likert Profile of Organizational Characteristics (POC) was used in Q-54 to measure organizational structure and managerial style. The simplified version of the POC measures an organization's management system on a scale of 1 (Autocratic) to 4 (Participative). System 4, participative, implies a "consensus form of decision-making." The systems are measured through four dimensions: leadership, motivation, communication and decision-making.

Figure 2.5 shows an overall mean POC score for all groups of between 2.48 and 2.81, indicating that all groups are more participative than autocratic but none is solidly in system 3 on all dimensions. All groups scored lower on the decision-making dimension than on the others. The CUPE groups scored slightly lower on leadership and on the overall POC than did the other groups.

Frequencies of responses for each question in the POC are given in Appendix 12 (Table 12.1). An overview of organizational characteristics showing the modes and means for Questions 11-15, 16, 48-51 and 54 is given in Appendix 13 (Table 13.1).

Figure 2.5
Mean Scores for Each of the Four Dimensions of the POC for N = 762 (Q-54)



3. *Stages of Technology*

a. *Definition*

Of the stage theories reviewed for this study (Sumner, 1985; Lutz, 1984; Zisman, 1978), Sumner's theory proved to be the most useful in that it was less restrictive in the requirements for the identification of each stage while simultaneously identifying the boundaries of the stages more clearly than other theories. The study gathered data on two dimensions of the Sumner stage theory of office automation: Office Technology and Office Applications.

Since the study sought to identify the stages of technology existing in the population in broad terms – no technology (0), introductory stage secretarial support (1), wider diffusion with some managerial support (2), integrated office systems, with strong managerial and administrative support (3), the Sumner theory was modified somewhat to include a Stage 0 (pre-technology stage) to allow for a comparison between offices with technology and those with no technology.

Figure 2.6 recaps the key components of the two dimensions of the modified Sumner model.

The stages were measured by Q-30 using the following minimum criteria:

0. All items in Q-30 were circled as "not available."
1. A word processor or terminal/mainframe or personal computer was used.
2. A terminal/mainframe or personal computer was used along with electronic mail and database management systems.
3. A terminal/mainframe and personal computer were used or a terminal/mainframe and word processor; in addition, electronic mail, file transfer, database management systems, management support packages and advanced document production features were used.

Figure 2.6
Key Components of Modified Sumner Model of Stages of Office Technology

Stage 0	Stage 1	Stage 2	Stage 3
(a)* major hardware is typewriter (no wp or pc)	major hardware is wp personal processing may be present mainframe may be available but wp predominant	expansion of tech. mainframe, distributed, micro and wp systems electronic printing and document distribution such as electronic mail database query languages	wider coverage of office technology mainframe, distributed and micro-based full document formatting and editing
(b)** individual processing of documents retyping of documents and information discrete clerical tasks	mechanization of clerical and office tasks to support secretarial productivity	shift to providing managerial support	support both managerial and administrative productivity integrated applications

*(a) Office Technology
**(b) Office Automation Applications

See Appendix 8, Table 8.1 for an overview of the frequency of use for the items identified as computer technology and applications or programs in Q-30.

Supplementary questions (Q-34 and 36) gathered data on office applications to determine single-task versus multiple-task use of the computer-related technology and to determine the availability of file transfer. Supplementary questions (Q-37-39) gathered data on office technology to determine the availability of technology for the manager, the frequency of use of the manager's technology and its compatibility with the support staff's technology.

b. *Findings*

The most significant finding was the identification of the vast majority of all groups in Stage 1 of office technology and applications according to the model outlined in Figure 2.6. That 70% of the managers did not have computer technology further corroborates that the technological emphasis is on secretarial support staff applications, primarily word processing.

Table 2.10 shows the relative frequencies of all groups in Stages 0-3. The non-CUPE sample shows a slightly higher percentage in Stage 2 (7.1%) than in Stage 0 (6.1%). The CUPE sample, however, shows a much higher percentage in Stage 0 (15.3%) than in Stage 2 (2.8%) and zero percentage in Stage 3.

When the Stage 0 responses are eliminated, the frequencies of responses with technology for all respondents are: 91.1% in Stage 1, 7.2% in Stage 2 and 1.8% in Stage 3.

Table 2.10
Frequencies of all Groups in Stages of Office Technology
Shown in Percentages

Stages	All Respondents N = 762	Non-CUPE	CUPE
0	8.5	6.1	15.3
1	83.4	75.4	81.8
2	6.6	7.1	2.8
3	1.6	1.9	0.0

Table 2.11, which shows an overview of the responses to Questions 34, 36 and 37, corroborates the Stage 1 predominance, showing that (a) 70% of the managers in all groups do not have computer terminals; (b) the percentages of single-task and multiple-task use of computers are very close, with single-task use predominating in the CUPE sample; (c) real transfer capability exists in only 36.3% of the total respondent group.

Table 2.11
Overview of Q-34, 36 and 37 – Frequencies as a Percentage for all Groups

Questions	All Respondents OT	Non-CUPE OT	CUPE OT
Q-34 Use of computer-related technology			
1. One task	47.4	43.9	54.2
2. More than one task	52.6	56.1	45.8
Q-36 Do you have to retype the data (i.e., is file transfer possible)			
1. Always/usually	6.9	8.3	2.9
2. Sometimes	12.3	15.8	12.6
3. Can transfer but retyping easier	7.0	9.2	6.8
4. Never/rarely retype	36.3	43.6	47.6
5. Situation doesn't apply to me	37.5	23.1	30.1
Q-37 Does manager have terminal?			
1. No	70.0	67.1	74.8
2. Yes	30.0	32.9	25.2

Of the (25-33%) managers who have terminals, the most frequent response showed almost every day use (68 to 73%) for all groups (Q-38). The majority of the managerial technology was "very compatible" with the support staff's technology(54-66%) (Q-39). The CUPE sample showed the higher percentages in both questions.

D. Dependent Variables

1. Job Enlargement and Job Enrichment, Part 1

a. *Definitions*

Job enlargement is defined as "horizontal loading in that it makes a job structurally bigger by bringing unconnected tasks under it" (Rajan, 1985).

Job enrichment is defined as "vertical loading because it makes employees responsible for a whole cycle of connected tasks, from conception to processing to evaluation of the results. Both aspects require diagnostic skills" (Rajan, 1985).

Q-29 assessed the kinds of activities performed by office staff. Analysis of the tasks was performed by classifying each task as: (1) clerical, (2) administrative, or (3) managerial. See Table 14.1 in Appendix 14 for the classification of tasks. The clerical classification focusses on discrete, "unconnected" tasks, such as typing and filing. The administrative classification focusses on activities, such as scheduling of events and gathering information, rather than on discrete tasks. The managerial classification focusses on complete processes that affect an entire unit, such as planning or budgeting.

If job enlargement were occurring, one would expect to see a predominance of clerical tasks (unconnected tasks) performed. If job enrichment were occurring, one would expect to see a predominance of managerial processes (whole cycles) performed. A job that contained primarily administrative activities could be described as less "enlarged" than the clerical but less "enriched" than the managerial. Such a job might be an indicator of job enlargement and job enrichment occurring simultaneously. Other combinations of the three task dimensions would place a job in relative positions of enlargement/enrichment as described by the Rajan definitions.

b. Findings

The survey revealed no obvious examples of either job enlargement or job enrichment. Both seem to be occurring simultaneously, with only a small inroad into the "enriched" managerial classifications.

An overview of the relative frequencies of the three task classifications as shown in Table 2.12 indicates that the mode classification for all groups was "clerical."

A comparison of the OT and NT groups indicates that the percentage of clerical and managerial tasks is greater for the OT groups, whereas the percentage of administrative tasks is smaller for the OT groups.

Table 2.12
Frequencies of Tasks Performed in the Three Classifications for all Groups Shown as a Percentage

Classifications	All Respondents N = 762	Non-CUPE		CUPE	
		OT	NT	OT	NT
Clerical (1)	60.6	57.3	56.7	72.0	63.6
Administrative (2)	28.6	28.9	32.9	24.0	34.1
Managerial (3)	10.8	13.8	10.4	4.0	2.3
	100.0	100.0	100.0	100.0	100.0

For the total sample and all groups except CUPE NT, typing/data entry/word processing was the task most frequently performed, with answering the telephone in second position. For the CUPE NT group, the reverse was true. Table 2.13 shows the 10 most frequently performed tasks by all respondents and groups. The tasks listed in Column 2 are in order of frequency as ranked by the all respondent group. Where the ranking of a task number differs from the all respondent group's ranking, the number appears as (T#) in the individual group's column. For example, the non-CUPE OT group ranked in seventh place Task 26 (T26) rather than Task 3 (as shown in Column 2).

In the overview of task classifications for the 10 most frequently performed tasks, Table 2.14 shows that the number of clerical tasks is either greater than the number of administrative activities or equal to it. The managerial processes are the smallest in number or non-existent.

Using the Rajan definitions, one can see no group that is clearly in the enriched category (predominantly managerial processes) nor one that is clearly in the enlarged category (predominantly clerical tasks).

The non-CUPE OT group shows the most favourable position on an enlargement-enrichment continuum. Although the clerical tasks outnumber the managerial processes, the combination of administrative activities (4) and managerial processes (2) is greater than the number of clerical tasks (4). The CUPE NT group falls at the enlargement end of of the continuum, with the number of clerical tasks (6) outnumbering the administrative activities (4) and the managerial processes non-existent. Table 2.15 shows the relative placement of all groups on an enlargement-enrichment continuum.

The implications of Table 2.15 are that job enlargement and job enrichment are occurring simultaneously; that the office technology groups are slightly more enriched than the non-technology groups; that the movement toward enrichment is small and in an initial stage. However, the differences as measured by this survey are relatively small. These implications are further borne out by an analysis of each task classification – clerical, administrative, managerial – to determine the number of tasks in each classification performed by all respondents. The means (on a 10-point scale) for each classification were as follows:

Clerical 5.46/10 Administrative 5.48/10 Managerial 3.5/10

Another aspect of measurement of job enlargement-enrichment assesses the degree to which an office staff member originates documents (that is, compiles the figures for spreadsheet work as opposed to data entry only or generates the financial and statistical data as opposed to copying them from another person's work). Q-32 assessed this for the OT groups only. Table 2.16 shows that the majority of respondents originate some of their documents, but most work is done from another person's copy, placing the most frequent response in the administrative (2) category. The next most frequently occurring response was "compose almost all" which falls into the managerial category (3).

Responses to Q-32 show the administrative classification predominating, with the managerial classification smaller than the combination of clerical and N/A's for all respondents and CUPE members. (The managerial classification is slightly larger than this combination in the non-CUPE OT group.)

Table 2.13
Ten Most Frequently Performed Tasks Shown as Percentage of N and Samples

Rank	Task No.	Description	Classif-ication	All Respondents N=753*	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
1	1	Typing/wp/data entry	(1)	70.9	71.2	69.1	76.2	61.4(T20)
2	20	Answer phone	(1)	48.9	45.9	55.9	51.7	52.3 (T1)
3	6	Gather info	(2)	36.3	36.3	33.8	38.4	31.8
4	4	Composing	(2)	32.7	35.2	32.4	34.4 (T25)	31.8
5	13	Org. work/ materials	(2)	24.2	25.9	25.0 (T9)	26.5 (T9)	31.8 (T9)
6	9	Filing	(1)	23.0	20.8	23.5 (T13)	24.5 (T4)	31.8 (T21)
7	3	Taking dictn/ transcribing	(1)	18.3	18.3 (T26)	23.5 (T26)	23.8 (T2)	24.5 (T11)
8	11	Photocopying	(1)	18.2	18.2 (T27)	22.1 (T21)	23.2	22.7 (T22)
9	25	Math/stats	(2)	17.9	17.9 (T15)	20.6 (T3)	21.9 (T7)	22.7
10	26	Direct others	(3)	17.3	17.3 (T11)	20.6 (T22)	20.5 (T13)	20.5 (T7)

Other tasks listed:
T2 Editing work of others (2)
T7 Analysing information (2)
T15 Scheduling events/travel (2)
T21 Receptionist duties (1)
T22 Office record-keeping (1)
T27 Super/training staff (3)

*Only 753 (rather than 762) respondents completed Q-29.

Table 2.14
Overview of Task Classifications for the Ten Most Frequently Performed Tasks

Classification	All Respondents N=762	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
Clerical (1)	5	4	6	5	6
Aministrative (2)	4	4	3	5	4
Managerial (3)	1	2	1	0	0

Table 2.15
Placement of all Groups on an Enlargement-Enrichment Continuum

Enlargement ----- |---- |---------- |----- |-------- |-------- Enrichment

CUPE NT	Non-CUPE NT	CUPE OT	All Respon-dents	Non-CUPE OT

Table 2.16
Self-Generated Work (Q-32) Frequencies for all Groups Shown in Percentages

Response	Task Classification	All Respondents OT N = 537	Non-CUPE OT	CUPE OT
Don't do these	N/A	20.3	15.1	17.7
Compose/compile almost all of thework myself	(3)	25.7	27.6	25.7
Compose/compile some of the work but most is done from another person's copy	(2)	43.8	48.1	40.7
Always from another's copy	(1)	10.2	9.2	15.9

2. *Job Enrichment and Job Enlargement, Part 2*

a. *Definition*

Hackman and Oldham's Job Diagnostic Survey (JDS) was used to measure job enrichment in Q-27. An "enriched" job according to the JDS is one that has measured potential for creating internal work motivation and job satisfaction. This definition of job enrichment is very different from the Rajan definition and is not related to job enlargement as an opposite definition.

The measurement of the motivating potential is called the Motivating Potential Score (MPS). The JDS can also be scored on each of its dimensions to attain an overall JDS score. When all groups were scored for both MPS and JDS, there was no difference in the relative outcomes. Consequently, JDS scores are presented in this report because they involve smaller numbers and are easier to convey.

The JDS is used to diagnose a job with a view to redesigning it for improvement of productivity and satisfaction and to assess the effects on employees of job changes, such as technology. The JDS measures five core job dimensions that translate into "critical psychological states" as shown in Figure 2.7.

The following definitions of the five core job dimensions are given on page 5 of the JDS:

i. Skill Variety. The degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of skills and talents of the employee.

ii. Task Identity. The degree to which the job requires completion of a "whole" and identifiable piece of work – i.e., doing a job from beginning to end with a visible outcome.

iii. Task Significance. The degree to which the job has substantial impact on the lives or work of other people – whether in the immediate organization or in the external environment.

iv. Autonomy. The degree to which the job provides substantial freedom, independence, and discretion of the employee in scheduling the work and in determining the procedures to be used in carrying it out.

v. Feedback from the Job Itself. The degree to which carrying out the work activities required by the job results in the employee [*sic*] obtaining direct and clear information about the effectiveness of his or her performance.

Figure 2.7
JDS Components and Relationships to Psychological States

Core Job Dimensions	Critical Psychological States
Skill Variety Task Identity Task Significance	Experienced Meaningfulness of Work
Autonomy	Experienced Responsibility for Outcomes of Work
Feedback	Knowledge of Actual Results of Work Activities

For a percentage comparison of mean scores on the individual dimensions of the JDS, see Table 15.1 in Appendix 15.

b. *Findings*

Although all groups showed mean JDS scores above the midpoint (8) on a 7-point scale (range 2-14), the non-CUPE OT groups scored highest and the CUPE NT group scored lowest. The relative mean scores are as follows:

1.	Non-CUPE OT	11.33
2.	All respondents	11.12
3.	Non-CUPE NT	10.91
4.	CUPE OT	10.69
5.	CUPE NT	10.56

While the OT groups show slightly greater enrichment than the NT groups, a greater difference exists between the non-CUPE sample (11.12) and the CUPE sample (10.63). Anova results show both the MPS and JDS to be significantly lower for CUPE than for non-CUPE ($p = .007$ for MPS; $p = .000$ for JDS) and show no definite effect for OT versus NT.

While the JDS and MPS showed most jobs in the survey as having "potential" for employee motivation and job satisfaction, the tasks analysis in Q-29 is a measure more congruent with the Rajan definitions of enrichment and enlargement which underly the survey.

3. *Career Advancement*

a. *Definition*

Career advancement for this study was defined as a promotion to a position with a higher level of responsibility accompanied by an increase in salary and job reclassification. Career advancement was measured according to two aspects:

i. Aspect 1 measured *existing* career advancement for all groups.

ii. Aspect 2 measured career advancement *since* the introduction of technology for the OT groups only.

b. *Findings*

Although the OT groups in both the non-CUPE and CUPE samples showed significantly higher CA_1 scores than the NT groups, little career advancement has occurred. No significant difference existed between the non-CUPE and CUPE samples.

CA_2 scores for both OT groups showed unfavourable career advancement since the introduction of computer-related technology. However, the non-CUPE OT group showed significantly higher CA_2 scores than the CUPE OT group.

Perceptions of career advancement opportunities inside and outside the respondents' organization were ascertained in Q-17 and 18. Figure 2.8 shows that opportunities are perceived as good in most instances. However, the CUPE OT group and both NT groups perceive their opportunities inside the organization as being poorer than do the non-CUPE OT and all respondent groups.

An overview of promotion eligibility and promotion received described in Table 2.17 shows the majority of the CUPE sample as overdue for promotion (Q-19). Although 52.9% of all respondents indicated that they were eligible for promotion with their current qualifications (Q-21), the most frequent response (mode) varies among the groups. The most frequent response for all groups when asked if they had received promotions since January 1983 (Q-22) was "no." "No position available" was the most frequent response given by all groups when asked why they were not promoted (Q-20).

Figure 2.8
Perception of Career Advancement Opportunities Inside and Outside the Organization (Based on Modes for Q-17 and 18)

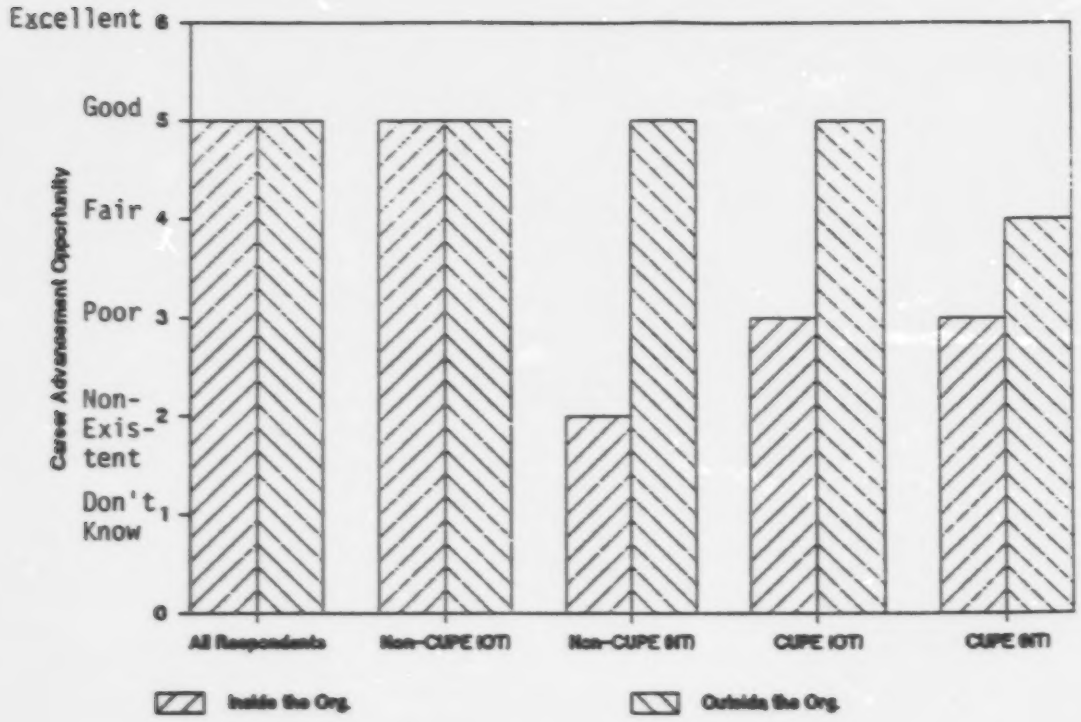


Table 2.17
Overview of Promotion Eligibility and Promotions Received (Frequency of Responses for Q-19-22 in Percentages)

		All Respondents	Non-CUPE		CUPE	
		N = 762	OT	NT	OT	NT
Q-19	Promotion overdue:					
	No	53.1	57.7	69.1	35.3	41.0
	Yes	46.9	42.3	30.9	64.7	59.0
Q-21	Eligible with current qualification?					
	No	40.8	42.3	55.6	26.9	50.0
	Yes	59.2	57.7	44.4	73.1	50.0
Q-22	No. of promotions since Jan. 83					
	0	59.8	56.4	73.5	59.1	79.1
	1	29.1	30.3	17.6	32.9	20.9
	2	8.0	9.3	7.4	6.0	0.0
	3	2.3	3.1	1.5	0.7	0.0
	4	0.5	0.8	0.0	0.0	0.0
	5	0.3	0.0	0.0	1.3	0.0
Q-20	Why not promoted?					
	1. No position available	41.5	42.1	50.0	39.6	36.0
	2. Career ceiling	33.6	38.6	45.8	23.1	20.0
	3. Usually filled outside	5.3	3.5	0.0	11.0	4.0
	4. Usually filled by technical personnel	5.3	4.0	0.0	6.6	16.0
	5. Other	14.3	11.9	4.2	19.8	24.0

An increase in responsibility without an accompanying promotion was experienced by the majority in all groups (Q-23): All respondents 73%; non-CUPE OT 77%; non-CUPE NT 71%; CUPE OT 67%; CUPE NT 67%. A horizontal move into a different work area without an accompanying promotion (Q-24) occurred for 40% of all respondents, 40% of non-CUPE OT, 27% of non-CUPE NT, 45% of CUPE OT, 43% of CUPE NT. A higher percentage of the OT groups experienced unrewarded lateral moves than the NT groups. The non-CUPE OT group also experienced a higher percentage of unrewarded responsibility increase; both CUPE groups experienced equal percentages (67%).

An overview of the raises received since January 1983 in Table 2.18 indicates that only a small percentage received no raises in the non-CUPE and all respondent groups; the most frequent number of raises was 3 for all respondents and non-CUPE OT, 4 for non-CUPE NT, 2 for CUPE OT and 3 for CUPE NT. Non-CUPE groups fared better than CUPE groups.

Table 2.18
Overview of Number of and Reasons for Raises: Frequencies Shown As Percentages for Q-25 and 26.

Description	All Respondents N = 762	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
Number of raises since Jan. 83:					
0	7.8	4.1	7.5	16.3	20.5
1	16.8	16.5	19.4	17.0	15.9
2	17.7	16.3	20.9	22.4	11.4
3	25.5	28.9	13.4	17.0	34.1
4	23.2	23.8	34.3	18.4	15.9
5 or more	9.0	10.4	4.5	8.9	2.2
Reasons for raises:					
1. Promotion/job reclassification	38.3	40.0	28.8	39.7	28.6
2. Performance/merit/ special projects	26.2	32.3	28.8	8.3	2.9
3. Other	2.4	2.8	1.7	1.7	0.0
4. Don't know	0.6	0.7	1.7	0.0	0.0
Annual raises	16.2	19.0	27.1	4.1	2.9
collective bargaining	16.3	5.2	11.9	46.2	65.6

The average number of raises was slightly higher for both OT groups, and the percentage receiving no raises was lower for both OT groups. Of those receiving raises, the most frequent of the two provided reasons for the raise in Q-26 was "promotion/job reclassification" in the non-CUPE groups. In the CUPE groups, collective bargaining was the most frequent reason indicated under "other."

Q-40 determined who worked for the organization before the introduction of computer-related technology. The percentages working there when technology was introduced were as follows: 65.9% for all respondents, 66.0% for non-CUPE OT; 64.8% for CUPE OT. In each case, the majority were in the organization when technology was introduced.

Q-41 determined whether respondents were personally involved in the decisions to introduce various aspects of technology; 41.6% of the non-CUPE respondents and 74.5% of the CUPE respondents were not involved in any of the decisions. Table 2.19 indicates the frequencies of involvement for each decision.

Table 2.19
Involvement in Decisions to Introduce Technology: Frequency in Percentage for OT Groups of Non-CUPE and CUPE (Q-41)

Description	Non-CUPE OT (N = 495)	CUPE OT (N = 152)
1. To introduce technology	19.5	7.4
2. Choice of kind of technology	20.3	10.6
3. Choice of kind of software	18.9	7.4
4. None	41.6	74.5

Of the respondents working in the organization when technology was introduced, 83.7% (non-CUPE) and 88.2% (CUPE) indicated that they had not yet had their jobs reclassified since the introduction of technology. Of the jobs reclassified, the majority were reclassified to a higher, more technical level. While the majority of the non-CUPE respondents whose jobs were reclassified also received a promotion and a salary increase, this was not the case for the CUPE group. Reclassification had no effect on the employees' opportunities for promotion in most cases. Table 2.20 shows the frequencies of responses for Q-43, 45-46.

i. Career Advancement, Aspect 1: Existing Career Advancement

The CA_1 score built from Questions 22, 25 and 26 measured existing career advancement on a 4-point scale shown in Table 2.21. Unfavourable indicated no raise, promotion or reclassification; neutral indicated a raise but no promotion; favourable indicated a promotion and a raise (but not for promotion/reclassification); ideal indicated a promotion and a raise for promotion/reclassification.

The most frequent score for all respondents was 1 = unfavourable. There was no significant difference between non-CUPE and CUPE scores. The OT groups in both the non-CUPE and CUPE samples showed significantly higher CA_1 scores than the NT groups. However, the OT mean score of 2.33 places the OTs in a position only slightly above neutral and slightly below favourable. The implications are that while the OT groups have advanced more than the NT groups, little career advancement has occurred overall.

ii. Career Advancement, Aspect 2: Career Advancement Since the Introduction of Technology

The CA_2 score built from Questions 42, 43, and 46 measured career advancement since the introduction of computer-related technology on a scale from 0-6 shown in Table 2.22. Q-40 determined those working in the organization when technology was introduced; hence CA_2 applies only to the OT groups since the NT groups answered "no" to Q-40 and skipped to Q-48. The components of the scale are as follows:

Negative	0	No promotion, decrease in salary and downward reclassification
Neutral	1	No promotion, raise or reclassification = no change
Unfavourable	2	No promotion, conflict: either + $ and - reclassification or reverse.
Favourable	3	No promotion, 1 of + $ or + reclassification
Favourable +	4	No promotion, both + $ and + Reclassification
Favourable + +	5	Promotion, 1 of + $ or + reclassification
Ideal	6	Promotion, both + $ and + reclassification

Table 2.22 shows an overview of the mean scores for the OT groups of non-CUPE and CUPE and the all respondent group, OT only. Although the non-CUPE group's score (1.5217) is significantly higher than the CUPE score (.5507), both scores indicate unfavourable career advancement since the introduction of computer-related technology.

Table 2.20
Reclassification, Salary Changes and Promotions Since the Introduction of Technology for the OT Groups: Frequencies in Percentages (Q-43, 45-46)

Description	Non-CUPE OT	CUPE OT
Reclassification		
1. Higher level	69.4	41.7
2. Lower level	1.6	8.3
3. Same level/different work	22.6	25.0
4. No real change	6.5	25.0
Salary change as a result of reclassification:		
1. No	25.0	50.0
2. Yes, increase	75.0	50.0
3. Yes, decrease	---	---
Promotion as a result:		
1. No	42.4	83.3
2. Yes	57.6	16.7
Effect of reclassification on opportunity for promotion:		
1. No	55.5	58.3
2. Yes, decrease	6.9	---
3. Yes, increase	37.8	41.7

Table 2.21
Overview of Mean Scores on Career Advancement, Aspect 1

Description	All Respondents N = 762	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
1. Unfavourable			1.845		1.824
2. Neutral	2.261	2.236		2.345	
3. Favourable					
4. Ideal					

Table 2.22
Overview of Mean Scores on Career Advancement, Aspect 2, for OT Groups

Description	All Respondents N = 647	Non-CUPE OT	CUPE OT
0. Negative			
1. Neutral	1.558		1.056
2. Unfavourable		2.061	
3. Favourable			
4. Favourable +			
5. Favourable + +			
6. Ideal			

E. Correlations Between Independent and Dependent Variables

1. Introduction

Kendall's tau correlation coefficient was used as a measure of association for the scores for the dependent variables: career advancement, job enrichment and job enlargement and the independent variables: employee characteristics (SPS), organizational characteristics (POC) and stages of technology. Kendall's tau takes on the values in the range of -1 to +1 with perfect positive/negative correlation indicated by tau = +1/-1 and no correlation when tau = 0.

2. Findings

No strong relationships were found between any of the scores. Most correlation coefficients are below .4 and there are several that are not significantly different from zero (i.e. no correlation).

a. *Job Enrichment*

The strongest relationships (though still below .4) were found between the dependent variable, job enrichment, and the two independent variables, secretarial professionalism (SPS) and profile of organizational characteristics (POC). Consequently, these relationships are displayed in Tables 2.23 and 2.24.

Table 2.23 shows the strongest positive correlation between work satisfaction (SPS #2) and job enrichment (JDS): an increase in job enrichment is accompanied by an increase in work satisfaction. Although the SPS #2 (and hence the overall SPS) is at the .4 level for the non-CUPE NT group, this isolated incident was not analyzed further at this point. The table shows a slightly higher positive correlation of job enrichment and professionalism for the NT groups than for the OT groups.

Table 2.23
Correlation Between Job Enrichment (JDS) and Secretarial Professionalism (SPS) as Shown by Kendall's Tau* Correlation Coefficients

Groups	Overall SPS Professionalism	SPS #1 Career Orientation	SPS #2 Work Satisfaction
1. Non-CUPE NT	.4098	.3029	.4583
2. CUPE NT	.3961	.3466	.3956
3. All respondents	.3529	.3008	.3725
4. CUPE OT	.3328	.2799	.3429
5. Non-CUPE OT	.3189	.2717	.3480

* Tau values from -1 to +1 with perfect positive/negative correlation indicated by tau = +1/-1 and no correlation when tau = 0.

Table 2.24 shows the relationship between job enrichment (JDS) and the four dimensions of the management system/organizational structure scale (POC). The strongest relationship for all respondents is between leadership and job enrichment: .2812; as leadership becomes more participative, job enrichment increases. The relationship between decisions and job enrichment is the weakest, but still shows a positive correlation between these two variables: as involvement in decision-making increases, job enrichment increases. For the non-CUPE NT group there is a stronger correlation between communication and job enrichment than between leadership and job enrichment. The relationship between organizational structure/managerial style and job enrichment is weaker than the relationship between secretarial professionalism and job enrichment.

Table 2.24
Correlation Between Job Enrichment (JDS) and Management System (POC) for all Respondents as Shown by Kendall's Tau Correlation Coefficients

Group	Overall	Leadership	Motivation	Communication	Decisions
Non-CUPE NT	.2756	.2718	.2552	.3288	.1565
All Respondents	.2631	.2812	.2316	.2369	.1922
CUPE OT	.2531	.2625	.2352	.1680	.1817
Non-CUPE OT	.2415	.2588	.2059	.2190	.1737
CUPE NT	.2309	.2694	.1835	.2354	.1790

b. *Job Enlargement*

Kendall's tau analysis was applied to the number of tasks performed by each respondent in each classification – clerical, administrative, managerial – and the SPS. Since the relationships were very weak even for the total respondent group, the other relationships have not been reported. Table 2.25 shows a slight increase in work satisfaction (SPS #2) as the task classification moves up from clerical to managerial, or as the job becomes less enlarged and more enriched. The relationship between professionalism and administrative tasks is slightly stronger than with either clerical or managerial tasks.

Although the relationship between job enlargement and managerial system/organizational structure (POC) is even weaker than that for job enlargement and secretarial professionalism, the relationship between managerial system increases in strength as the task classification moves up from clerical to managerial. In other words, as the managerial system becomes more participative, the administrative and managerial tasks increase or the job becomes less enlarged and more enriched as shown in Table 2.26.

Because the correlations are not strong, caution should be taken in using these correlations as predictors. Further study is required. In the meantime, they should be used as indicators of relationships only.

When Kendall's tau analysis was applied to job enlargement and stage of technology, no relationship existed.

Table 2.25
Correlation Between Job Enlargement (Level of Task Classifications) and Secretarial Professionalism (SPS) for all Respondents as Shown by Kendall's Tau Correlation Coefficients

Task Classification	Overall SPS	SPS #1 Career Orientation	SPS #2 Work Satisfaction
Clerical	.1225	.1309	.0781
Administrative	.1934	.2000	.1259
Managerial	.1364	.1188	.1286

Table 2.26
Correlation Between Job Enlargement and Management System (POC) for all Respondents as Shown by Kendall's Tau Correlation Coefficients

Task Classification	Overall	Leadership	Motivation	Communication	Decisions
Clerical	.0912	.1018	.0736	.0969	.0662
Administrative	.0967	.1136	.0752	.0435	.1065
Managerial	.1044	.1242	.0993	.0465	.1013

c. *Career Advancement*

Career Advancement Aspect 1 showed weak correlations with professionalism, management system and stages of technology for the total respondent group. The correlations for the samples were weaker. Career Advancement Aspect 2 (which showed career advancement since the introduction of technology for respondents working in the organization when technology was introduced, N = 191) showed weak correlations with professionalism and management system but stronger correlation with stage of office technology – at the .4392 level. Hence, there is a relationship between career advancement and stage of technology (even though the descriptive statistics for CA_2 indicate that the level of career advancement is unfavourable).

Appendix 3. Discussion and Implications

A. Introduction

Since the comparison of variables on an individual variable basis did not lead to an informative analysis, there was no utility in investigating further for the purposes of this report, given the time constraint for analysis and given the plan stated in the proposal for the research grant (namely, that partial correlation analysis of the variables would be done to determine whether further statistical analysis would be considered). As indicated in Section E, further study of the correlations is required to determine reasons for their weakness when stronger correlations were expected.

A slightly higher positive correlation between job enrichment and professionalism existed for the NT groups than for the OT groups (at the .4 level). Although how to account for this difference is not clear, perhaps the introduction of office technology is occurring at the lower levels of the organization with the result that executive secretaries to the higher management levels (from whom one would expect a high level of professionalism and job satisfaction) have no office technology.

The relationship between professionalism and administrative tasks is slightly stronger than with either clerical or managerial tasks. Perhaps the small number of managerial tasks being performed prevented a useful correlation between professionalism and managerial tasks which was expected to be stronger than with the administrative tasks.

Although the correlations should not be used as predictors until further study has been done, where they are positive, they have been used as indicators of relationships when they apply to theories underlying the study and in the conclusions of the study.

The CUPE sample, regardless of OT or NT, has generally fared more poorly than the non-CUPE sample. However, it should be noted than since the CUPE sample size (196) is smaller than the non-CUPE sample size (566), this situation may not be representative of CUPE as a whole.

B. Office Technology

Since this survey indicates that the majority of respondents are in the initial stage of office technology (Stage 1 in which the word processor is the predominating technology and the focus is on secretarial support rather than on managerial support) and that very few respondents are in Stages 2 and 3, it may be too early to determine the long-term impact of office technology on job enrichment, job enlargement and career advancement.

The study can determine the short-term impact which is as follows: the OT groups are experiencing somewhat more job enrichment, somewhat less job enlargement and somewhat more career advancement than the NT groups. However, the overall office scene is one in which job enlargement and job enrichment appear to be occurring simultaneously, with very little job enrichment (as measured in concrete terms by tasks and activities) taking place and with career advancement at a neutral or unfavourable stage.

Of the correlations undertaken, the strongest relationship existed between career advancement and stage of technology (at the .4932 level). Consequently, even though the descriptive statistics for CA_2 indicate that the level of career advancement is unfavourable, this relationship merits further study. Since the level of technology is predominantly in the first stage for the respondents in this study, a positive correlation would indicate that as the stage of technology rose, so would the level of career advancement. Although this potential exists, there is cause for concern: since the career advancement scores are unfavourable at Stage 1, there is a risk that the potential will not be realized. The potential and the risk are cause for conducting longitudinal studies that can observe the impact of office technology over longer time periods than have been studied to date.

There is some evidence that department and branch size are related to the stage of technology. The relationship becomes stronger as the unit becomes smaller. However, there was strong evidence that the size of the organization was not related to the stage of technology. This correlation also requires further study.

The descriptive statistics on which the following discussions are primarily based are very informative for most questions and variables.

C. Job Enrichment and Job Enlargement

Based on Rajan's definitions of enrichment and enlargement, there are no obvious examples of predominately one or the other occurring. Rather, as indicated previously, they seem to be occurring simultaneously. Although the small movement toward enrichment could be accounted for by the predominance of the first stage of technology, one does not want to risk settling for this interpretation.

Office technology promised to enrich jobs by (a) removing the drudgery of repetitive tasks, (b) providing more supervisory and decision-making responsibilities, (c) having support staff become members of the management team with greater involvement in the total product and total organization, and (d) creating career advancement opportunities. Office technology seems to be "keeping its promises" in the following ways:

a. In the classification of jobs (as opposed to tasks), there is a higher frequency of jobs at the supervisor/managerial level in the non-CUPE OT group than in the non-CUPE NT group. The majority of job classification in CUPE, regardless of group, are at the clerical level – a situation which should be remedied.

   More clerical tasks than administrative activities or managerial processes are being performed by all groups (ratio approximately 5 to 1 for all respondents). A comparison of the frequencies of all tasks performed for OT and NT groups shows that the frequency of clerical tasks and managerial processes is higher for the OT groups and the frequency of administrative tasks is lower for the OT groups.

   In the top 10 tasks performed, the non-CUPE OT group shows the most favourable position on the job enrichment-job enlargement continuum, with 4 tasks in each of the clerical and administrative classifications and 2 processes in the managerial classification.

The implications of these statistics are that job enrichment and job enlargement are occurring simultaneously and that the OT group is slightly more enriched than the NT group (even though the CUPE OT group does not include any managerial processes).

b. In the 10 most frequently performed tasks, only two were at the managerial level and were ranked in the 7th and 8th positions: Directing others ranked 7 for the non-CUPE OT and NT groups; supervising/training staff ranked 8 in the non-CUPE OT groups only. Neither of these tasks appeared in the CUPE sample's rankings. Though one could say that the frequency of directing the work of others and the supervising and training of staff is larger in the non-CUPE OT group, that they are non-existent in the CUPE sample somewhat negates any claim one might make on the basis of office technology.

In the job classifications, there exist more supervisory/managerial classifications in the non-CUPE group than in any other group. There is also a more even distribution of classifications (above the clerical) in the non-CUPE OT group. However, CUPE is bottom heavy in both the OT and NT groups, with more clerical job classifications than any other.

Of the respondents who worked in the organization when technology was introduced, 41.6% of the non-CUPE OT group and 74.5% of the CUPE OT group had no involvement in the decision to introduce technology or in the decision concerning the choice of hardware and software. (For the CUPE OT group, this factor may have had a negative effect on their level of job satisfaction and is congruent with the management system with which the average CUPE support staff person works.)

Since the prevailing management system is barely half way toward a participative style (with a mean score of 2.82 for non-CUPE and 2.53 for CUPE, on a 4-point scale) and since the mean score for decision-making was the lowest of all the dimensions on the POC, the possibility of support staff's having more decision-making responsibilities seems slim, especially for the CUPE OT groups whose management system is more autocratic than in their NT group.

c. The statistics and information in points a and b seem to apply to support staff's becoming members of the management team as well. Another measure of job enrichment/enlargement (as it applies to greater involvement in the total product and more variety in the job) is the degree to which office staff members originate the content of the documents they produce as opposed to inputting data generated by someone else. Of the OT groups, only 25.7% composed and compiled almost all their work themselves, placing them in the managerial/enriched category. So on an enlargement-enrichment continuum, only one-quarter of the OT groups is showing an "enriched" task component.

d. The creation of career advancement opportunities will be discussed in Section D.

The JDS was also used to measure job enrichment and it showed most jobs in the survey as having measured "potential" for creating employee motivation and job satisfaction. Although the mean scores for the OT groups were sightly higher than for the NT groups, the potential was significantly lower for CUPE than for non-CUPE. Work satisfaction as measured by the SPS #2 showed a mean score of 4.05 on a 5-point scale. Work satisfaction was generally lower for the CUPE sample, but the NT group showed a slightly higher score than the CUPE OT group.

Employees' attitudes toward and feelings about their jobs and work satisfaction (except for CUPE) are very positive despite the small movement into the "enriched" managerial tasks. This discrepancy between somewhat high job enrichment scores on the JDS and SPS and the evidence of very little job enrichment based on task analysis is accounted for by two factors. The JDS and SPS elicit subjective responses; the tasks analysis elicits concrete, factual responses. Given the early stage of technology, the novelty of the automated equipment has not yet subsided; the enthrallment with word processors is manifested in the positive subjective responses.

The non-CUPE OT group had a larger percentage of enriched tasks than the other groups and showed a greater distribution of job classifications than the other groups. On the other hand, the CUPE OT group showed less work satisfaction than the CUPE NT group, and CUPE overall showed less "potential" enrichment as measured by the JDS. That the CUPE groups were also predominantly in the clerical job classification with no "enriched" tasks in the 10 most frequently performed tasks (i.e., their jobs were more enlarged than enriched on the Stevenson job enlargement-job enrichment continuum) indicates that the task analysis is a more basic measure of job activity than the JDS and hence, a better measure of job enrichment based on that activity.

D. Career Advancement

The two career advancement scores point in the same direction – that little career advancement is taking place. On the CA_1 score (showing existing career advancement for all respondents), the OT groups in both the non-CUPE and CUPE samples showed significantly higher scores than the NT groups, even though the NT groups in both samples have been in their current position and in their current organization and have more full-time experience in office work than the OT groups.

However, the OT mean score showed their advancement to be slightly above neutral (no advancement) and slightly below favourable (some advancement). The CA_2 scores indicate unfavourable career advancement since the introduction of computer-related technology. The non-CUPE OT group's score was significantly higher than the CUPE score. These scores are congruent with the findings concerning job classifications and task analysis.

Although there was a positive correlation of the .4392 level between the stage of technology and career advancement (as measured by CA_2), since career advancement scores in Stage 1 are unfavourable, there is a risk that the potential will not be realized. This correlation will be studied further.

The OT groups have shown some advantages over the NT groups:

1. The average salary is approximately $1500 (CUPE) to $3000 (non-CUPE) higher.
2. The average number of raises is .2% higher.
3. The percentage receiving no raises is 3.5-4% lower.
4. A higher percentage (approximately 11%) received raises because of promotion/ reclassification.

However, the impact of these advantages is lessened by these counter-balancing disadvantages:

1. Although 11% more of the OT group received a higher percentage of raises owing to promotion/reclassification, only 40% or fewer of their group received raises for this reason.

2. Although fewer OTs received no promotions, they still formed 56-59% of their group.

3. A higher percentage of OTs experienced unrewarded lateral moves and they formed 40-56% of their group.

4. The non-CUPE OT group also experienced a higher percentage of unrewarded responsibility increase and they formed 77% of their group; 67% of both CUPE groups experienced this negative situation.

5. Of the respondents working in the organization when technology was introduced, 84% of the non-CUPE group and 83% of the CUPE group had not had their jobs reclassified since that introduction.

These disadvantages are not ameliorated by the fact that reclassification had no effect on the employees' opportunities for promotion in most cases, a negative effect on only 7% of the non-CUPE OT group and a positive effect on 38-42% of the OT groups.

The foregoing disadvantages indicate that either job enlargement or unrewarded responsibility increase has occurred. In either case, organizations have exploited their support staff. These disadvantages coupled with unfavourable or neutral career advancement scores indicate that for the most part, office technology has not created vertical career paths. The existence of a higher percentage of male managers in the OT groups corroborates this career advancement deficit.

In addition, those without technology, with less access to compensated job-related courses, are in jeopardy in terms of becoming technologically literate and in terms of work satisfaction, job enrichment, career advancement and perhaps employment.

Appendix 4

A SURVEY OF SECRETARIAL AND ADMINISTRATIVE STAFF

Centre for Administrative and Information Studies

The University of Western Ontario

This survey of office workers is designed to study how secretarial and administrative jobs have changed and the factors which have contributed to this change.

Please answer all questions, except where you are specifically instructed to skip to another question. All questions can be answered either by circling the number of your response or by writing in a short answer. Please feel free to qualify your answers or to write comments in the margins of the questionnaire. Your answers will be kept completely confidential. Your willingness to cooperate by answering the survey is very much appreciated.

Please return the questionnaire in the postage-paid envelope to:

Mrs. Janet H. Stevenson
Associate Professor
The University of Western Ontario
Centre for Administrative and Information Studies
Social Science Centre
London, Ontario N6A 5C2

Please return by: November 28, 1986

If you are not now or have not been a secretary, administrative assistant or other member of office support staff, please indicate this by checking the box below, and then return the questionnaire to us, without filling it out.

☐ I AM NOT A MEMBER OF OFFICE SUPPORT STAFF

Q-1 Many offices are acquiring word processors, micro-computers, large computers and other sophisticated electronic equipment. What sort of effect do you feel computer technology has on office workers? (Circle the number of your response.)

1. EXTREMELY BENEFICIAL
2. SOMEWHAT BENEFICIAL
3. NEUTRAL
4. SOMEWHAT HARMFUL
5. EXTREMELY HARMFUL

Q-2 What is the job title for your current position?

_____

Q-3 Suppose you were going to apply for your current job. What would be the minimum qualifications that your company would require in terms of *education*?

1. NONE
2. SECONDARY SCHOOL GRADUATION
3. BUSINESS, SECRETARIAL OR COMMUNITY COLLEGE
4. SOME UNIVERSITY COURSES
5. UNIVERSITY DEGREE
6. OTHER ... (Please specify) _____

Q-4 What would be the minimum qualifications your company would require in terms of *experience* if you were applying for your current job? (Circle as many as apply.)

1. NONE
2. OFFICE, ADMINISTRATIVE OR SECRETARIAL EXPERIENCE
3. ACCOUNTING EXPERIENCE
4. WORD PROCESSING EXPERIENCE
5. OTHER COMPUTING EXPERIENCE (for example, with personal computers or databases)
6. OTHER ... (Please specify) _____

How many years of experience would be required?

_____YEARS

Q-5 How many hours do you work on your job in a typical week?

_____HOURS

Q-6 Is your job:

1. PERMANENT
2. TEMPORARY OR CASUAL

Q-7 Length of time in your current position:

_____ YEARS

Q-8 Length of time with your current organization/company:

_____ YEARS

Q-9 Length of time in the workforce in *full-time* employment (30 hours or more per week) in office work:

_____ YEARS

Q-10 Length of time in the workforce in *part-time* employment (fewer than 30 hours per week) in office work:

_____ YEARS

Q-11 How many managers/supervisors do you work for directly? That is, how many managers think of you as their secretary, office assistant, or administrative assistant?

_____ MANAGERS/SUPERVISORS

Q-12 Is the manager or supervisor to whom you are directly responsible male or female?

1. MALE
2. FEMALE

Q-13 Is your individual work performance monitored by your employer using any form of computer-related technology? (That is, are your keystrokes automatically tallied during data entry?)

1. NO
2. YES

Q-14 Does your organization allow you paid time off to take job-related courses?

1. NO
2. YES, BUT I HAVE TO PAY MY OWN TUITION FEES
3. YES, AND MY ORGANIZATION ALSO PAYS ALL OR PART OF THE TUITION FEES

Q-15 Have you enrolled in any job-related courses?

1. NO
2. YES

Q-16 Do you personally belong to a union or to any other work-related group that has collective bargaining power?

1. NO
2. YES
3. DON'T KNOW

Q-17 How would you describe your opportunities for advancement *within* this organization?

1. EXCELLENT
2. GOOD
3. FAIR
4. POOR
5. NON-EXISTENT
6. DON'T KNOW

Q-18 How would you describe your opportunities for advancement *outside* of this organization?

1. EXCELLENT
2. GOOD
3. FAIR
4. POOR
5. NON-EXISTENT
6. DON'T KNOW

Q-19 Do you feel that you are overdue for a promotion?

1. NO → If NO, skip to Q-21
2. YES

Q-20 Why have you not been promoted? (Circle one number.)

1. THERE ARE NO POSITIONS AVAILABLE
2. I HAVE REACHED THE CAREER CEILING FOR MY POSITION
3. HIGHER POSITIONS ARE USUALLY FILLED FROM OUTSIDE THE ORGANIZATION
4. HIGHER POSITIONS ARE USUALLY FILLED BY TECHNICAL PERSONNEL
5. OTHER ... (Please specify) _____

Q-21 Are you eligible for promotion to any higher positions within your organization with your present qualifications?

1. NO
2. YES

Q-22 Have you received any promotions since January 1983?

1. NO
2. YES ... Total Number _____

Q-23 Have you been assigned any increases in responsibility without a promotion?

1. NO
2. YES

Q-24 Have you had any horizontal moves into different work areas without an accompanying promotion?

1. NO
2. YES

Q-25 Have you received any raises since January 1983?

1. NO → If NO, skip to Q-27
2. YES ... Total Number _____

Q-26 Have any of these raises been due to any of the following? (Circle as many as apply.)

1. PROMOTION OR JOB RECLASSIFICATION
2. PERFORMANCE, MERIT OR SPECIAL PROJECTS
3. OTHER ... Please specify _____ _____
4. I DON'T KNOW

Q-27 Listed below are a number of statements which could be used to describe a job. Please indicate how accurate each statement is in describing your job. (Circle one number for each statement.)

	VERY INACCURATE	MOSTLY INACCURATE	SLIGHTLY INACCURATE	UNCERTAIN	SLIGHTLY ACCURATE	MOSTLY ACCURATE	VERY ACCURATE
1. The job requires me to use a number of complex or high-level skills	1	2	3	4	5	6	7
2. The job requires a lot of cooperative work with other people	1	2	3	4	5	6	7
3. The job is arranged so that I do *not* have the chance to do an entire piece of work from beginning to end	1	2	3	4	5	6	7
4. Just doing the work required by the job provides many chances for me to figure out how well I am doing	1	2	3	4	5	6	7
5. The job is quite simple and repetitive	1	2	3	4	5	6	7
The job can be done adequately by a person working alone -- without talking or checking with other people	1	2	3	4	5	6	7
7. This job is one where a lot of other people (staff or clients) can be affected by how well the work gets done	1	2	3	4	5	6	7
8. The job denies me any chance to use my personal initiative or judgement in carrying out the work	1	2	3	4	5	6	7
9. The job provides me the chance to finish completely the pieces of work I begin	1	2	3	4	5	6	7
10. The job itself provides very few clues about whether or not I am performing well	1	2	3	4	5	6	7
11. The job gives me considerable opportunity for independence in how I do the work	1	2	3	4	5	6	7
12. The job itself is not very significant or important in the broader scheme of things	1	2	3	4	5	6	7

Q-28 Circle the number which best represents your attitude to each of the following statements related to your work.

	STRONGLY DISAGREE	DISAGREE	NO OPINION	AGREE	STRONGLY AGREE
1. My involvement in professional organizations is an important part of my work	1	2	3	4	5
2. I keep abreast of what is going on in my field	1	2	3	4	5
3. I have a moral obligation to keep secret any activities that have been placed in my confidence	1	2	3	4	5
4. My work is an enjoyable part of my life	1	2	3	4	5
5. Secretarial work is so vital, society could not function without it	1	2	3	4	5
6. I regularly attend professional meetings	1	2	3	4	5
7. I constantly strive to improve my skills	1	2	3	4	5
8. It is my ethical responsibility to be good at my job	1	2	3	4	5
9. My work is stimulating and challenging	1	2	3	4	5
10. Any attempts to weaken this profession would be harmful to society	1	2	3	4	5
11. I consider it a privilege and a responsibility to hold an office in my professional organization when called upon to do so	1	2	3	4	5
12. New developments in office systems do not pertain to me	1	2	3	4	5
13. It is my responsibility to uphold the confidentiality of my employer	1	2	3	4	5
14. I find my work to be interesting	1	2	3	4	5
15. My contribution helps insure success of the total organization	1	2	3	4	5
16. I systematically read the professional journals	1	2	3	4	5
17. I would feel inadequate in my job if I didn't continue learning about the new developments in my profession	1	2	3	4	5
18. The better I perform at my work, the better I feel about myself	1	2	3	4	5
19. I am fortunate to be able to work as a member of office support staff	1	2	3	4	5
20. My profession provides a vital service to business and society	1	2	3	4	5
21. Attending conferences keeps me informed about activities in my field	1	2	3	4	5
22. It is essential for me to continue learning to maintain competence in my profession	1	2	3	4	5
23. Doing my job well is a serious responsibility	1	2	3	4	5
24. My work is fulfilling	1	2	3	4	5
25. My contribution is an essential core to all business functions	1	2	3	4	5

Q-29 There is a great deal of variation in the kinds of activities office staff perform. Please read through the list below, and thinking about what you do at work, circle *all* numbers that describe work that you do. Then write the numbers of the *five* activities from those listed that you think take up the most of your time. (Please list the activities in order of time spent, that is, list the activity which takes up the most of your time *first*.)

1. TYPING, DATA ENTRY OR WORD PROCESSING
2. EDITING WORK OF OTHERS
3. TAKING DICTATION OR TRANSCRIBING
4. COMPOSING LETTERS, MEMOS OR REPORTS
5. DICTATING LETTERS, MEMOS OR REPORTS
6. GATHERING INFORMATION
7. ANALYZING INFORMATION
8. ANNOTATING OR ROUTING INFORMATION
9. FILING
10. RECORDS MANAGEMENT
11. PHOTOCOPYING
12. ORDERING SUPPLIES
13. ORGANIZING WORK OR MATERIALS
14. TAKING CARE OF OFFICE EQUIPMENT
15. SCHEDULING EVENTS OR TRAVEL
16. PLANNING ACTIVITIES OR PROJECTS FOR THE WHOLE DEPARTMENT/UNIT
17. TAKING NOTES AT MEETINGS
18. TALKING AT MEETINGS
19. CALLING MEETINGS
20. ANSWERING THE TELEPHONE
21. RECEPTIONIST DUTIES
22. OFFICE RECORD-KEEPING
23. BUDGETING FOR THE WHOLE DEPARTMENT
24. BUDGETING FOR A SMALLER UNIT
25. MATHEMATICAL OR STATISTICAL CALCULATIONS
26. DIRECTING OR COORDINATING THE WORK OF OTHERS
27. SUPERVISING OR TRAINING STAFF
28. DEVELOPING PROCEDURES FOR THE WHOLE DEPARTMENT
29. MAKING DECISIONS WHICH WILL AFFECT THE WHOLE DEPARTMENT/UNIT AND FOLLOWING UP ON THEM
30. FORMULATING, IMPLEMENTING OR EVALUATING POLICY FOR YOUR DEPARTMENT
31. OTHER _____

Now please write the numbers of the 5 activities from the above list which take up most of your time.

ACTIVITY TAKING MOST TIME:

1 _____

2 _____

3 _____

4 _____

5 _____

*The next section of the questionnaire refers to "**computer-related technology**" frequently. By **computer-related technology** is meant word processors, computers, computer terminals, or electronic equipment. Please answer Q-30 whether or not you have computer-related technology in your office.*

Q-30 Please indicate how often you use each of the following pieces of computer equipment or computer program by circling the appropriate number. Circle 1 for each item that is not available to you. (Circle one number for each item.)

	NOT AVAILABLE	NEVER USE	USE SOMETIMES	USE FREQUENTLY
1. Word processor	1	2	3	4
2. Terminal for mainframe computer	1	2	3	4
3. Computer outside your organization	1	2	3	4
4. Personal computer	1	2	3	4
5. Telephone with voice store/forward	1	2	3	4
6. Facsimile transmitting equipment (FAX)	1	2	3	4
7. Optical scanning equipment (OCR)	1	2	3	4
8. Microform processing equipment	1	2	3	4
9. Computer conferencing	1	2	3	4
10. Electronic mail	1	2	3	4
11. Computer programming languages	1	2	3	4
12. Programs for transferring files between two or more computers	1	2	3	4
13. Database management systems	1	2	3	4
14. Management support packages	1	2	3	4
15. Advanced document production features	1	2	3	4
16. Other (Please specify) _____	1	2	3	4

If you have circled 1 or 2 for *all* of these questions, skip to Q-48

Q-31 How many years of experience have you had with each of the following types of computer-related technology? Please indicate how many years of experience you have had in *your current position* and in *your total work experience* including your current position. If you have used the technology in circumstances other than your job (e.g., at home or school), use the "Other Experience" category. If you have had no experience with a type of equipment, fill in "0".

CURRENT JOB	TOTAL WORK EXPERIENCE	OTHER EXPERIENCE	
_____	_____	_____	YEARS OF EXPERIENCE WITH A WORD PROCESSOR
_____	_____	_____	YEARS OF EXPERIENCE WITH A PERSONAL COMPUTER
_____	_____	_____	YEARS OF EXPERIENCE WITH A MAINFRAME COMPUTER
_____	_____	_____	YEARS OF EXPERIENCE WITH OTHER TECHNOLOGY . . .

(Please specify) _____

This section is designed to determine the kinds of work you do on computers or using computer-related technology.

Q-32 Some people working in offices do word processing, data entry, spreadsheet work, and financial and statistical calculations. Do *you* do any of these kinds of work? If you do, is it *original* work (that is, have you composed the text or compiled the figures *yourself*) or do you work *from another person's* copy or calculations? (Circle one number.)

1. I DO NOT DO ANY OF THESE KINDS OF WORK → Skip to Q-34
2. I COMPOSE OR COMPILE ALMOST ALL OF THE WORK MYSELF → Skip to Q-34
3. I COMPOSE OR COMPILE SOME OF THE WORK MYSELF, BUT MOST WORK IS DONE FROM ANOTHER PERSON'S COPY
4. I ALWAYS WORK FROM ANOTHER PERSON'S COPY

↓

Q-33 Please indicate how much of an average work day you spend on word processing, entering data, or correcting data *from another person's copy or specifications*:

1. LESS THAN ONE-QUARTER OF AN AVERAGE WORK DAY
2. BETWEEN ONE-QUARTER AND ONE-HALF OF AN AVERAGE WORK DAY
3. MORE THAN HALF OF AN AVERAGE WORK DAY

Q-34 Which of the following two statements better describes your use of computer-related technology? (Circle one answer.)

1. I DO JUST <u>ONE TASK</u> ON THE COMPUTER (e.g. just word processing, or just data entry) → Skip to Q-36
2. I DO <u>MORE THAN ONE TASK</u> ON THE COMPUTER (e.g. word processing, financial calculations, looking after calendars)

↓

Q-35 Which of the following statements describes your use of computer-related technology to do your tasks?

1. I HAVE TO USE MORE THAN ONE SET OF EQUIPMENT FOR DIFFERENT TASKS
2. I CAN DO ALL OF MY COMPUTER WORK ON <u>ONE</u> SET OF EQUIPMENT

Q-36 If you wish to use the same information for more than one purpose, such as using the data from a spreadsheet in an annual report, do you have to retype the data or can you transfer it from one file or computer to another easily?

1. I ALWAYS OR USUALLY HAVE TO RETYPE THE DATA
2. I SOMETIMES HAVE TO RETYPE THE DATA
3. IT IS POSSIBLE TO TRANSFER THE DATA, BUT IT IS USUALLY EASIER TO RETYPE THE DATA
4. I NEVER OR RARELY HAVE TO RETYPE THE DATA - I CAN TRANSFER FILES EASILY
5. THIS SITUATION DOESN'T APPLY TO ME AT ALL

Q-37 Does your manager or supervisor have a terminal or personal computer of her/his own?

1. NO → If NO, skip to Q-40
2. YES

↓

Q-38 On average, how often does she/he use it? (Circle *one* number.)

1. ALMOST EVERY DAY
2. ONCE OR TWICE A WEEK
3. A FEW TIMES A MONTH
4. A FEW TIMES A YEAR
5. NEVER USES IT AT ALL
6. I DON'T KNOW HOW OFTEN SHE OR HE USES IT

Q-39 How would you rate the compatibility between your computer equipment and that of your manager?

1. VERY COMPATIBLE -- ALLOWS A GREAT DEAL OF INFORMATION SHARING
2. SOMEWHAT COMPATIBLE -- ALLOWS SOME INFORMATION SHARING
3. NOT AT ALL COMPATIBLE -- ALLOWS NO INFORMATION SHARING

*This section refers to the "**introduction of computer-related technology**" which means the point in time when the first piece of computer-related technology (e.g. word processor, computer, computer terminal or electronic equipment) was brought into your office.*

Q-40 Did you work for your current organization *before* the introduction of computer-related technology?

1. NO → If NO, skip from here to Q-48
2. YES

↓

Q-41 Please indicate which of the following decisions you were involved in personally. (Circle the numbers of *all* responses that apply.)

1. THE DECISION TO INTRODUCE THE TECHNOLOGY
2. THE CHOICE OF THE KIND OF TECHNOLOGY
3. THE CHOICE OF THE KIND OF SOFTWARE
4. I WAS NOT INVOLVED IN ANY OF THESE DECISIONS

Q-42 Has your job been reclassified (were you given a new job title) since the introduction of computer-related technology?

1. NO → If NO, skip from here to Q-48
2. YES

↓

Q-43 How does your new job classification differ from your previous one?

1. IT IS AT A HIGHER LEVEL
2. IT IS AT A LOWER LEVEL
3. IT IS AT THE SAME LEVEL AS THE PREVIOUS ONE, BUT INVOLVES A DIFFERENT KIND OF WORK
4. THERE IS NO REAL CHANGE

Q-44 Is your new classification more technical than your previous one?

1. NO
2. YES

Q-45 Did your yearly salary change as a result of this reclassification?

1. NO
2. YES, IT INCREASED
3. YES, IT DECREASED

Q-46 Did you receive a promotion as a result of this reclassification?

1. NO
2. YES

Q-47 Did reclassification affect your opportunities for promotion? (Circle one number.)

1. NO
2. YES, IT DECREASED MY OPPORTUNITIES FOR PROMOTION
3. YES, IT INCREASED MY OPPORTUNITIES FOR PROMOTION

Please answer the following questions about the organization for which you work.

Q-48 Which of the following classifications best describes your organization? (Circle one number.)

1. AGRICULTURE
2. FORESTRY
3. FISHING AND TRAPPING
4. MINING
5. MANUFACTURING (including food, beverages and tobacco)
6. CONSTRUCTION
7. TRANSPORTATION, COMMUNICATIONS AND OTHER UTILITIES
8. TRADE (including wholesale, retail, import and export businesses)
9. FINANCE, INSURANCE AND REAL ESTATE
10. SERVICE (recreation, business, information, education, medical, research)
11. PUBLIC ADMINISTRATION (all levels of government)
12. OTHER ... Please specify _____

Q-49 What is the *primary* function of your department/unit? (Circle one number.)

1. ACCOUNTING
2. COMMUNICATIONS
3. ENGINEERING
4. FINANCE
5. GENERAL ADMINISTRATION
6. INFORMATION ANALYSIS
7. INFORMATION SYSTEMS
8. LEGAL
9. HEALTH
10. MARKETING
11. OPERATIONS
12. PERSONNEL
13. PRODUCTION
14. PUBLIC RELATIONS
15. PURCHASING
16. RESEARCH
17. SALES
18. OTHER _____

Q-50 How many employees work in your department/unit?

_____EMPLOYEES

Q-51 How many employees work at *your location or branch* of the organization? (Circle one number. If you're not sure, use your best estimate.)

1. FEWER THAN 5 EMPLOYEES
2. 5 - 9 EMPLOYEES
3. 10 - 19 EMPLOYEES
4. 20 - 49 EMPLOYEES
5. 50 - 99 EMPLOYEES
6. 100 - 199 EMPLOYEES
7. 200 - 499 EMPLOYEES
8. 500 - 999 EMPLOYEES
9. OVER 1000 EMPLOYEES

If your organization has only one location or branch, skip to Q-52.

Q-52 How many employees work in your *entire organization*? (Circle one number. If you're not sure, use your best estimate.)

1. FEWER THAN 5 EMPLOYEES
2. 5 - 9 EMPLOYEES
3. 10 - 19 EMPLOYEES
4. 20 - 49 EMPLOYEES
5. 50 - 99 EMPLOYEES
6. 100 - 199 EMPLOYEES
7. 200 - 499 EMPLOYEES
8. 500 - 999 EMPLOYEES
9. OVER 1000 EMPLOYEES

Q-53 What is the size of the community in which your organization is located? (Circle one number.)

1. METROPOLITAN AREA (Large city, over 500 000 people)
2. LARGE CITY (100 000 to 499 999 people)
3. MEDIUM-SIZED CITY (30 000 to 99 999 people)
4. SMALLER URBAN CENTRE (under 30 000 people)
5. RURAL AREA (farm or non-farm)

Q-54 The following section deals with the leadership style, motivation strategies, communication patterns and how decisions are made within the organization where you work. (Circle the number of the most accurate response to each of the questions in this section.)

Leadership:

1 How much confidence and trust is shown in subordinates?

1----------2----------3----------4

Very little	Some	Quite a bit	A very great deal

2 How free do subordinates feel to talk to superiors about their work?

1----------2----------3----------4

Not very free	Somewhat free	Quite free	Very free

3 How often does your supervisor or manager ask you for opinions or ideas and actually use them?

1----------2----------3----------4

Rarely	Sometimes	Often	Very frequently

Motivation:

4 How do superiors motivate subordinates -- through fear, threats, punishment, rewards or involvement?

1----------2----------3----------4

Fear, threats, punishment, occasionally rewards	Rewards, with some punishment	Mainly rewards, with some punishment and involvement	Rewards and involvement, primarily based on group-set goals

5 In your organization, where does responsibility lie for achieving high results?

1----------2----------3----------4

Mostly at top	Top and middle	Fairly widespread	At all levels

6 How much cooperative teamwork exists?

1----------2----------3----------4

Very little	Some	Quite a bit	A very great deal

Communication:

7 What is the usual direction of information flow?

1----------2----------3----------4

Downward	Mostly downward	Down and up	Down, up and sideways

8 How is information from supervisors or managers to clerical or secretarial staff accepted?

1----------2----------3----------4

With distrust	Often with suspicion	Usually with trust	A great deal of trust

9 How accurate is information from clerical or secretarial staff to supervisors or managers?

1----------2----------3----------4

Usually inaccurate	Occasionally inaccurate	Often accurate	Almost always accurate

10 How well do superiors know problems faced by subordinates?

1----------2----------3----------4

Not well	Somewhat	Quite well	Very well

Decisions:

11 At what level are decisions made?

1----------2----------3----------4

Mostly at top	Policy at top, some delegation	General policy at top, more delegation	Widespread decision making

12 How often are subordinates involved in decisions related to their work?

1----------2----------3----------4

Almost never	Occasionally consulted	Generally consulted	Fully involved

This final section of the questionnaire asks questions about yourself that will help us to unaerstand and interpret the results of the study.

Q-55 Your gender. (Circle the number of your answer.)

1. MALE
2. FEMALE

Q-56 Your present marital status. (Circle one number.)

1. NEVER MARRIED
2. MARRIED OR COMMON-LAW RELATIONSHIP
3. DIVORCED
4. SEPARATED
5. WIDOWED

Q-57 Your year of birth: 19_____

Q-58 Number of people that are *financially* dependent on you. (If none, write "0".)

_____ PEOPLE ARE FINANCIALLY DEPENDENT ON ME

Q-59 What is your approximate total yearly *personal* income from earnings before taxes? (Circle one number.)

1. LESS THAN $ 5 000
2. $ 5 000 TO $ 9 999
3. $10 000 TO $14 999
4. $15 000 TO $19 999
5. $20 000 TO $24 999
6. $25 000 TO $29 999
7. $30 000 TO $34 999
8. $35 000 TO $39 000
9. $40 000 OR OVER

Q-60 Which is the *highest* level of education that you have completed? (Circle one number.)

1. LESS THAN GRADE 9
2. SOME HIGH SCHOOL
3. COMPLETED HIGH SCHOOL
4. SOME COLLEGE (NON-UNIVERSITY)
5. COMPLETED COLLEGE (NON-UNIVERSITY)
6. SOME UNIVERSITY
7. COMPLETED UNIVERSITY DEGREE

Q-61 In what year did you complete your highest level of education? 19_____

Thank you for your help with this study.

We welcome any comments that you might have. Please use the space on the back cover of the questionnaire for your comments.

Please use this space to write your comments about the questionnaire.

Acknowledgements

We gratefully acknowledge the financial support given this project by Labour Canada and the active cooperation of the Canadian Union of Public Employees. We are also grateful to the following organizations who have allowed us access to their subscriber or membership lists: the Association of Administrative Assistants; Maclean Hunter (publishers of *Canadian Secretary*); the Professional Secretaries International® (PSI®) association; the Association of Information Systems Professionals; and The University of Western Ontario's Centre for Administrative and Information Studies and Department of Alumni Affairs.

The *Profile of Organizational Characteristics* is copyright © 1978 by Rensis Likert Associates, Inc., Ann Arbor, Michigan 48104, and is used by permission.

The *Secretarial Professionalism Scale* is used by permission of Dr. Judee A. Timm, Department of Business Education, Southern Illinois University at Carbondale, Carbondale, Illinois 62901.

Table 5.1
Mailing Dates

1. Questionnaires
   - A. Groups 1, 3, 4, 5, 7-17 (English): 86 11 15-17
   - B. Group 2 (AAA, mailed from Vancouver): 86 11 21
   - C. Group 6 (To CUPE Local 79, mailed from Toronto: Approx. 86 12 02
   - D. Groups 18, 19, 20 (Francophone locals): 86 12 22
   - E. Groups 17 (French section): 87 01 08

2. Reminder/Acknowledgement cards
   - A. Groups 1, 2, 4, 5, 7-17: 86 11 26
   - B. Group 2 (AAA): 86 12 03
   - C. Group 6 (Local 79): approx. 86 12 09
   - D. Groups 18, 19, 20, (Francophone locals): approx. 87 01 15

3. Follow-up Letter #1
   - A. Groups 1, 3, 4, 5, 7-17: 86 12 08
   - B. Group 2 (AAA): approx. 86 12 15
   - C. Group 6 (Local 79): 87 01 27
   - D. Groups 17, 18, 19, 20 (Francophone locals): 87 02 11

4. Follow-up Letter #2 (with replacement questionnaire)
   - A. Groups 1, 3, 4, 5, 7-17: 87 01 19
   - B. Group 2: 87 01 23
   - C. Group 6 (Local 79): 87 03 10
   - D. Groups 17, 18, 19, 20: 87 03 10

Table 6.1
Return Status by Time

Return Status	When Returned* Period 1 N-C**	Period 1 CUPE	Period 2 N-C	Period 2 CUPE	Period 3 N-C	Period 3 CUPE	Period 4 N-C	Period 4 CUPE	Period 5 N-C	Period 5 CUPE
Complete	297	209	195	73	12	3	70	25	0	5
N/A	97	147	93	243	2	7	65	87	0	9
Refused	0	0	1	0	0	0	3	2	0	2
Deceased	1	0	0	1	0	0	2	1	0	0
Undeliverable	77	30	47	21	2	2	18	6	1	0
Total For Period	472	386	337	338	16	12	158	121	1	16
% of All Returns for Each Group	48.0	44.2	34.2	38.7	1.6	1.4	16.1	13.9	0.1	1.8

*Period 1 = Prior to first reminder letter
Period 2 = Between second and first reminder letters
Period 3 = Immediately after second reminder (but too soon to be a result of that reminder)
Period 4 = After the second (final) reminder; before the coding deadline (March 23, 1987)
Period 5 = After coding deadline, and up to April 15, 1987

**N-C - Non-CUPE responses

Table 7.1
Return Status by Gender

	Return Status											
	Unreturned		Completed*		N/A		Refused		Deceased		Undelivered	
Gender	No.	% of all cases	No.	% of all cases	No.	% of all cases	No.	% of all cases	No.	% of all cases	No.	% of all cases
Female	369	57.66	731	82.23	408	54.40	9	100.00	4	80.00	142	69.61
Male	185	28.90	85	9.56	265	35.33	0	.00	1	20.00	32	15.69
Unknown	86	13.44	73	8.21	77	10.27	0	.00	0	.00	30	14.70
All Cases	640	100.00	889	100.00	750	100.00	9	100.00	5	100.00	204	100.00

* Includes some completed questionnaires later determined to be "Not Applicable" because of an inappropriate job type.

Table 8.1
Overview (in Percent) of Frequency of Use for Each Computer Technology or Program in Q-30

Technology	1. Not Available					2. Never Use				
	% of Total Respondents (N=762)	% of Non-CUPE OT (N=495)	% of Non-CUPE NT (N=71)	% of CUPE OT (N=152)	% of CUPE NT (N=44)	% of Total Respondents (N=762)	% of Non-CUPE OT (N=495)	% of Non-CUPE NT (N=71)	% of CUPE OT (N=152)	% of CUPE NT (N=44)
1. Word processor	17.5	7.1	66.7	16.1	75.7	13.5	7.6	33.3	22.1	24.3
2. Terminal to mainframe	34.2*	31.2*	66.7	21.1	68.4	22.3	22.4	33.3	15.0	31.6
3. External computer	58.4*	56.8*	66.1	59.0*	63.9	28.3	27.0	33.9	28.1	36.1
4. Personal computer	39.0*	32.3*	69.8	38.6*	73.0	18.4	16.3	30.2	17.9	27.0
5. Telephone, voice store & forward	61.5*	59.3*	60.9	64.8	75.7	16.5	15.1	25.0	16.2	18.9
6. FAX	53.4*	43.3*	63.5	75.5*	81.1	15.4	14.3	19.0	16.5	18.9
7. OCR	76.8*	77.1*	74.6	75.9*	80.6	17.4	17.1	23.8	15.6	16.7
8. Microform processing	68.8*	68.6*	71.4	65.7*	77.8	24.4	25.2	25.4	22.9	19.4
9. Computer conferencing	70.4*	67.4*	74.6	74.6*	83.3	24.7	25.9	25.4	22.5	16.7
10. Electronic mail	57.5*	52.2*	74.6	61.3*	80.6	19.3	17.2	25.4	23.2	19.4
11. Programming languages	52.0*	47.9*	69.8	48.9*	83.3	34.7	36.9	30.2	34.5	16.7
12. Programs for file transfer	48.1*	42.0*	69.8	48.9*	83.3	29.0	30.4	30.2	27.0	16.7
13. Database management	44.9*	38.5*	69.8	44.9*	80.6	32.9	34.6	30.2	31.9	19.4
14. Management support packages	50.7*	43.8*	71.4	55.1*	83.3	32.0	34.6	28.6	29.0	16.7
15. Advanced document production	53.8*	47.6*	71.4	59.1*	80.0	28.6	30.6	28.6	24.1	20.0

* indicates Mode in all columns

Table 8.1 (cont'd)
Overview (in Percent) of Frequency of Use for Each Computer Technology or Program in Q-30

Technology	3. Use Sometimes					4. Use Frequently				
	% of Total Respondents (N=762)	% of Non-CUPE OT (N=495)	% of Non-CUPE NT (N=71)	% of CUPE OT (N=152)	% of CUPE NT (N=44)	% of Total Respondents (N=762)	% of Non-CUPE OT (N=495)	% of Non-CUPE NT (N=71)	% of CUPE OT (N=152)	% of CUPE NT (N=44)
1. Word processor	21.1	24.9	----	22.8	----	47.9*	60.4*	----	38.9*	----
2. Terminal to mainframe	18.2	21.5	----	20.4	----	25.2	24.9	----	43.5*	----
3. External computer	10.2	12.7	----	9.4	----	3.0	3.5	----	3.6	----
4. Personal computer	22.2	26.3	----	24.1	----	20.4	25.1	----	19.3	----
5. Telephone, voice store & forward	6.8	7.6	3.1	7.7	----	15.3	18.0	10.9	11.3	5.4
6. FAX	17.4	22.9	12.7	5.8	----	13.7	19.5	4.8	2.2	----
7. OCR	3.3	3.8	----	4.3	----	2.5	2.0	1.6	4.3	2.8
8. Microform processing	4.5	4.9	1.6	7.9	----	1.9	1.3	1.6	3.6	2.8
9. Computer conferencing	3.8	4.9	----	2.9	----	1.2	1.8	----	0.0	----
10. Electronic mail	12.4	16.5	----	7.7	----	10.8	14.1	----	7.7	----
11. Programming languages	11.5	13.4	----	13.7	----	1.8	1.8	----	2.9	----
12. Programs for file transfer	15.4	18.4	----	16.3	----	7.6	9.2	----	7.8	----
13. Database management	14.2	17.4	----	13.8	----	8.1	9.5	----	9.4	----
14. Management support packages	12.9	15.5	----	13.8	----	4.4	6.1	----	2.2	----
15. Advanced document production	10.8	13.2	----	10.9	----	6.8	8.6	----	5.8	----

* indicates Mode in all columns

Table 9.1
Overview of Responses by Province

Province	Return Status							Province Summary	
	Not Returned	Completed	% of All Completed	N/A	Refused	Deceased	Undeliverable	Total Sent	% to Province
NF	6	13	1.46	9	0	0	0	28	1.12
NS	5	22	2.47	10	0	1	4	42	1.68
PE	1	6	.67	2	0	0	0	9	.36
NB	1	12	1.35	3	0	0	0	16	.64
QC	76	98	11.02	81	2	0	23	280	11.21
ON	411	470	52.87	457	3	2	111	1454	58.23
MB	64	61	6.86	72	2	1	8	208	8.33
SK	5	6	.67	9	0	0	8	28	1.12
AB	14	48	5.40	8	1	0	19	90	3.60
BC	50	124	13.95	85	1	1	31	292	11.69
NT	0	1	.11	0	0	0	0	1	.04
Unknown	7	28	3.15	14	0	0	0	49	1.96
Total	640	889		750	9	5	204	2497	

Table 10.1
Respondent Profile by Job Category

Question	Job Category: Clerk		Secretary		Exec. Secretary		Admin. Assist.		Managerial Supervisor	
	Mode	%	Mode	%	Mode	%	Mode	%	Mode	%
Work Experience										
Hours worked/week	35	60.1	35	38.5	40	27.6	35	28.1	40	34.1
Permanent or Temporary job	P	89.9	P	94.8	P	100.0	P	97.8	P	98.4
Years current job	1	18.2	1	22.2	3	14.1	1	25.7	1	19.7
Years with company	2	10.7	2	12.7	6	9.2	2	11.8	3	9.8
Years employed full time	6	7.7	15	8.2	20	8.0	8	7.4	12	9.8
Years employed part time	0	49.6	0	53.5	0	69.1	0	57.0	0	67.3
Technology Experience										
Years with word processor										
a. Current job	1	28.9	1	30.6	1	28.9	2	24.0	1	21.8
b. All work exper.	0	35.0	3	18.6	3	16.8	0	17.2	1	15.5
Years with personal computer, current job	0	53.0	0	37.9	0	42.9	0	37.2	0	30.0
Years with mainframe computer, current job	0	36.2	0	52.3	0	60.8	0	49.4	0	37.0
How much computer work is self-composed?	Some	41.7	Some	43.1	Some	52.1	Some	45.0	All/ Most	41.9
Amount of day spent on non-original computing tasks	.25-.5	38.7	.50+	37.9	.25-.5	36.0	-.25 tied .25-.5	45.3 with 45.3	-.25	50.9
No. of computer tasks	1	55.7	1	54.3	1	55.0	1+	55.9	1+	68.9
Career Advancement										
Number of promotions	0	69.4	0	70.0	0	69.0	0	46.3	1	40.0
Increased responsibility, no promotion	Yes	68.5	Yes	74.0	Yes	76.3	Yes	76.5	Yes	73.9
Horizontal moves, no promotion	No	53.2	No	54.8	No	71.3	No	62.4	No.	59.5
Number of raises	3	27.4	4	25.3	3	28.3	3	22.6	3	32.5
Reason for raises	Union	46.9	Perf	31.4	Perf	40.5	Perf	39.2	Perf	36.5

Table 10.1 (cont'd)

Question	Job Category: Clerk		Secretary		Exec. Secretary		Admin. Assist.		Managerial Supervisor	
	Mode	%	Mode	%	Mode	%	Mode	%	Mode	%
Demographic Data										
Gender	F	91.9	F	99.4	F	98.8	F	95.6	F	96.7
Marital Status	Mar	65.8	Mar	59.3	Mar	59.3	Mar	61.8	Mar	65.6
Year of birth	55-59	21.0	50-54	17.0	45-49	23.0	55-59	22.5	50-54	23.0
No. of dependents	0	67.8	0	69.4	0	68.7	0	74.8	0	71.9
Earnings in $1000.	20-24	34.2	20-24	36.5	20-24	42.9	20-24	38.5	25-29	34.2
Highest level of education	HS	38.3	HS	35.5	Some Coll	30.7	HS tied with Some Coll	23.1 24.1	Some Coll	23.1
Year education completed	80-84	23.0	70-74	19.0	80-84	19.0	70-74	19.0	70-74	19.0
Organization Size & Community Size										
No. in dept.	20-49	25.0	-5	28.0	-5	35.0	-5	35.0	5-9	31.0
No. at location	20-49	24.3	20-49	26.1	20-49	22.0	100-199	20.6	200-499	18.8
No. in organization	200-499	28.8	500-999	28.6	200-499	28.2	200-499	23.3	200-499	29.0
Community size	metro	46.3	large city	31.4	metro	38.1	metro	43.7	metro	50.8

Table 10.1 gives the most frequent response (mode) for each question listed. The percentage given is the percentage of responses equal to the mode for each question (based on the number of responses to the individual question, not on total number of respondents). See Research Instrument, Appendix 4, for the exact form of questions and response categories.

Mean responses and/or a comparison of modes and means in Appendix 2, Section C provide a fuller understanding of the nature and complexity of the total respondents and groups.

Table 11.1
Frequencies for Questions in the Secretarial Professionalism Scale for all Respondents (Q-28)

		Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
1.	My involvement in professional organizations is an important part of my work	9.6	26.3	15.1	31.1	17.9
2.	I keep abreast of what is going on in my field	1.1	5.8	5.7	58.1	29.3
3.	I have a moral obligation to keep secret any activities that have been placed in my confidence	.8	.7	.9	11.3	86.3
4.	My work is an enjoyable part of my life	2.0	4.8	8.7	50.3	34.3
5.	Secretarial work is so vital society could not function without it	1.1	5.6	8.7	41.2	43.4
6.	I regularly attend professional meetings	13.9	26.3	11.7	26.4	21.7
7.	I constantly strive to improve my skills	0.0	3.2	4.5	48.8	43.5
8.	It is my ethical responsibility to be good at my job	0.1	0.3	2.1	26.7	70.8
9.	My work is stimulating and challenging	3.1	9.3	8.8	45.5	32.9
10.	Any attempts to weaken this profession would be harmful to society	1.1	8.6	19.7	37.4	33.2
11.	I consider it a privilege and a responsibility to hold an office in my professional organization when called upon to do so	0.8	6.8	28.0	38.9	25.5
12.	New developments in office systems do not pertain to me*	43.4	43.1	4.3	5.4	2.8

* Reverse scoring on item 12 only

Table 11.1 (cont'd)
Frequencies for Questions in the Secretarial Professionalism Scale for all Respondents (Q-28)

		Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
13.	It is my responsibility to uphold the confidentiality of my employer	0.5	0.7	2.1	15.3	81.4
14.	I find my work to be interesting	1.5	5.0	5.0	50.7	37.8
15.	My contribution helps insure success of the total organization	0.7	2.2	3.7	53.7	39.7
16.	I systematically read the professional journals	6.7	19.7	16.5	42.9	14.2
17.	I would feel inadequate in my job if I didn't continue learning about new developments in my profession	1.7	8.8	9.9	49.2	30.4
18.	The better I perform at my work, the better I feel about myself	0.3	0.5	1.6	36.5	61.1
19.	I am fortunate to be able to work as a member of office support staff	1.9	5.4	19.0	48.1	25.6
20.	My profession provides a vital service to business and society	0.7	1.5	7.3	49.4	41.2
21.	Attending conferences keeps me informed about activities in my field	2.7	7.0	22.1	43.6	24.7
22.	It is essential for me to continue learning to maintain competence in my profession	1.3	4.6	5.3	49.7	39.1
23.	Doing my job well is a serious responsibility	0.3	0.5	0.8	36.0	62.4
24.	My work is fulfilling	2.8	10.0	9.7	50.6	26.9
25.	My contribution is an essential core to all business funcions	0.9	6.9	15.5	41.6	25.0

Table 12.1
Frequencies for Questions in the Profile of Organizational Characteristics

Question	Value	Frequency in Percent: All Respondents	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
Leadership						
1. Confidence/trust shown in subordinates	Very little	5.0	2.4	4.3	12.5	9.1
	Some	25.8	23.0	15.9	36.8	34.1
	Quite a bit	47.8	50.4	53.6	39.5	38.6
	A great deal	21.4	24.2	26.1	11.2	18.2
2. Freedom to talk to superiors about work	Not very free	5.8	3.9	5.8	9.9	13.6
	Somewhat free	24.3	23.3	18.8	29.8	25.0
	Quite free	43.2	44.2	44.9	39.1	43.2
	Very free	26.7	28.6	30.4	21.2	18.2
3. How often are opinions asked for and used	Rarely	13.7	8.9	8.7	25.0	36.4
	Sometimes	34.7	32.9	36.2	43.4	22.7
	Often	33.2	37.6	34.8	20.4	25.0
	Very frequently	18.4	20.5	20.3	11.2	15.9
Motivation						
4. How do superiors motivate subordinates	Fear/threats/ punishment	8.8	4.6	11.1	19.4	21.6
	Rewards/some punishment	8.8	7.9	6.3	15.3	2.7
	Mainly rewards	19.8	21.0	17.5	19.4	10.8
	Reward/involvement	62.6	66.6	65.1	46.0	64.9
5. Where does responsibility lie for achieving high results	Mostly at top	15.4	13.6	18.5	20.3	14.0
	Top and middle	24.8	24.1	21.5	29.7	20.9
	Fairly widespread	22.4	21.8	26.2	20.9	27.9
	At all levels	37.5	40.5	33.8	29.1	37.2
6. How much cooperative teamwork exists	Very little	6.7	4.9	8.7	11.2	9.1
	Some	22.3	20.3	21.7	27.0	29.5
	Quite a bit	47.7	49.6	47.8	43.4	40.9
	A very great deal	23.2	25.2	21.7	18.4	20.5

Table 12.1 (cont'd)

Question	Value	Frequency in Percent: All Respondents	Non-CUPE OT	Non-CUPE NT	CUPE OT	CUPE NT
Communication						
7. Usual direction of information flow	Downward	10.0	7.3	10.8	17.6	12.2
	Mostly downward	20.5	19.5	13.8	25.7	24.4
	Down and up	27.9	27.7	36.9	23.6	31.7
	Down, up and sideways	41.6	45.5	38.5	33.1	31.7
8. How is information from managers to secretarial staff accepted	With distrust	1.1	.4	1.5	2.6	2.3
	Often with suspicion	14.9	11.0	11.9	25.2	27.3
	Usually with trust	67.4	69.0	65.7	65.6	59.1
	With a great deal of trust	16.6	19.6	20.9	6.6	11.4
9. How accurate is information from secretarial staff to managers	Usually inaccurate	.5	.4	.0	1.3	.0
	Occasionally inaccurate	7.2	6.1	7.4	9.9	9.1
	Often accurate	47.5	48.2	42.6	49.0	43.2
	Almost always accurate	44.7	45.3	50.0	39.7	47.7
10. How well do supervisors know subordinates' problems	Not well	16.5	12.3	15.9	28.5	22.7
	Somewhat	33.6	34.0	26.1	35.8	34.1
	Quite well	40.3	42.2	53.6	29.8	34.1
	Very well	9.6	11.5	4.3	6.0	9.1
Decisions						
11. At what level are decisions made	Mostly at top	31.9	26.1	32.8	45.4	47.7
	Policy at top, some delegation	30.5	32.2	29.9	28.3	20.5
	General policy at top, more delegation	27.8	31.6	26.9	19.1	15.9
	Widespread decision-making	9.8	10.0	10.4	7.2	15.9
12. How often are subordinates involved in work-related decisions	Almost never	12.5	9.0	13.2	19.2	27.3
	Occasionally consulted	37.8	37.3	23.5	47.7	31.8
	Generally consulted	39.8	42.2	52.9	29.1	29.5
	Fully involved	9.9	11.6	10.3	4.0	11.4

Table 13.1
Overview of Organizational Characteristics

Organizational Characteristic		Mode	Mode %	Mean*
Q-11	Number of managers	1	45.4	2.371
Q-12	Gender of manager	M	75.0	----
Q-13	Is work monitored?	No	96.1	----
Q-14	Does company allow time off for courses and pay tuition?	Yes	67.6	----
Q-16	Does respondent belong to union?	No	61.6	----
Q-48	Organization type	Service	32.5	----
Q-49	Department function	General Administration	26.5	----
Q-50	Number in department	0-4	28.0	42.327
Q-51	Number in branch or location	20-49	22.4	----
Q-54	Managerial Style Scale: 1/Autocratic to 4/Participative			
	a. Leadership	3.000	19.7	2.775
	b. Motivation	3.333	17.4	2.993
	c. Communication	3.000	18.4	2.949
	d. Decisions	2.000	22.2	2.313
	e. Overall	2.938	2.0	2.754

* Mean given only where appropriate

Table 14.1
Classifications and Overview of the Scoring Frequencies of Tasks in Q-29

Task No.	Task Description	*Classification	No. of Responses (3750)	N = 753 % of Cases
1	Typing, data entry	1	534	70.9
2	Editing other's work	2	121	16.1
3	Taking dictation	1	138	18.3
4	Composing	2	246	32.7
5	Dictating	3	13	1.7
6	Gathering information	2	273	36.3
7	Analyzing information	2	134	17.8
8	Annotating or routing information	2	118	15.7
9	Filing	1	173	23.0
10	Records management	2	99	13.1
11	Photocopying	1	137	18.2
12	Ordering supplies	1	49	6.5
13	Organizing work	2	182	24.2
14	Taking care of equipment	1	13	1.7
15	Scheduling	2	108	14.3
16	Planning for entire department	3	56	7.4
17	Taking notes at meetings	1	71	9.7
18	Talking at meetings	2	13	1.7
19	Calling meetings	3	26	3.5
20	Answering telephone	1	368	48.9
21	Receptionist	1	102	13.5
22	Office record keeping	1	113	15.0
23	Budgeting for entire department	3	43	5.7
24	Budgeting for smaller unit	2	18	2.4
25	Math/stats calculations	2	135	17.9
26	Directing/coordinating	3	130	17.3
27	Supervising/training	3	120	15.9
28	Developing procedures	3	40	5.3
29	Making decisions for department	3	46	6.1
30	Formulating policy	3	29	3.9

* 1 = Clerical level task
2 = Administrative level task
3 = Managerial level task

Appendix 15

Table 15.1
Job Enrichment: Percentage Comparison of Mean Scores on the Individual Dimensions of the JDS (Q-27) (Range 2-14)

Dimensions	All Respondents (N = 762)	Non-CUPE		CUPE	
		OT	NT	OT	NT
Skill Variety	10.729	11.339	10.485	9.530	8.419
Task Identity	10.587	10.752	10.465	10.189	10.302
Task Significance	12.079	12.200	11.254	12.079	12.070
Autonomy	11.626	11.871	11.648	10.887	11.386
Feedback	10.572	10.493	10.710	10.760	10.605
Overall JDS	11.120	11.330	10.910	10.690	10.560

Bibliography

Part 1: Material Used in Construction of the Research Instrument

Association of Information Systems Professionals. *AISP Information/Word Processing/ Administrative Support Salary Survey 1985*. Willow Grove, Pennsylvania 19090: Association of Information Systems Professionals.

Canadian Union of Public Employees. CUPE's Computer Task Force. *CUPE's Computer Questionnaire*. 21 Florence Street, Ottawa, Ontario K2P 0N6: CUPE.

Cohen, Marcy; White, Margaret. *The Impact of Microtechnology on Women in B.C. Industries. Interim Report*. 9-4443 Irmin Street, Burnaby, B.C. V5J 1X8: The Women's Skill Development Society, July 31, 1985.

Dillman, Don A. *Mail and Telephone Surveys*. The Total Design Method. New York: John J Wiley & Sons, 1978, 325 p.

Hackman, J. Richard; Oldham, Greg R. *The Job Diagnositc Survey: An Instrument for the Diagnosis of Jobs and the Evaluation of Job Redesign Projects*. New Haven, Connecticut: Technical Report No. 4. Yale University, May 1974.

Honeywell Inc.; Response Analysis Corporation. *Office Automation and the Workplace: A National Survey of Managers and Secretaries*. Minneapolis, Minnesota 55408: Honeywell, Inc., March 1983.

Likert, Rensis. *Profile of Organizational Characteristics*. Ann Arbor, Michigan: Rensis Likert Associates, Inc., 1978.

Likert, Rensis. "Profile of Organizational Characteristics (Likert 1967)," in Robinson, John P.; Athanasiou, Robert; Head, Kendra B.; *Measures of Occupational Attitudes and Occupational Characteristics*. Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, February 1969, p. 276-280.

Lutz, Charles M. "The Impact of Technology on the Office," *Office Systems Research Journal*, Spring 1984, 2 (2): 19-26.

Miller, Delbert C. *Handbook of Research Design and Social Measurement*. New York: David McKay Co., 1964, 322 p.

Mitchell, James V., ed. *Tests in Print III. An Index to Tests, Test Reviews and the Literature on Specific Tests*. Lincoln, Nebraska: The Buros Institute of Mental Measurements, The University of Nebraska-Lincoln, 1983, 714 p.

Mitchell, James V., ed. *The Ninth Mental Measurements Yearbook*. Lincoln, Nebraska: The Buros Institute of Mental Measurements, The University of Nebraska-Lincoln, 1985, 2 vol.

Sumner, Mary. "Office Automation: Organizational Learning and Technological Change," in Ellis, Clarence A., ed., *2nd ACM-SIGOA Conference on Office Information Systems*. Toronto, Canada, June 25-27, 1984. 5 (1&2): p. 88-95.

Sumner, Mary. "Stage Evolution of Office Automation Technological Change and Organizational Learning," *Office Systems Research Journal*, Spring 1985, 3 (2): 1-12.

Timm, Judee A. *Questionnaire. Development of an Instrument to Measure the Attitudinal Dimension of Secretarial Professionalism*. 4 p. Copy obtained from the author at Southern Illinois University at Carbondale, Carbondale, Illinois, 62901.

Timm, Judee A. *Secretarial Professionalism Scale*. 1986, 2 p. Copy obtained from the author at Southern Illinois University at Carbondale, Carbondale, Illinois, 62901.

Timm, Judee A. "Development of an Instrument to Measure the Attitudinal Dimension of Secretarial Professionalism," *Delta Pi Epsilon Journal*, Summer, 1986, 28 (3): 121-134.

Uhlig, Ronald P.; Farber, David J.; Bair, James H. *The Office of the Future: Communication and Computers*. Amsterdam; New York: North-Holland Publishing Company, 1979.

Zisman, Michael D. "Office Automation: Revolution or Evolution," *Sloan Management Review*, Spring 1978, 19 (3): 1-16.

Part 2: General References

Books and Pamphlets

Booz, Allen & Hamilton Inc. *Summary Report. Booz, Allen Study of Manageria/Professional Productivity*. June 1980, 2 vol.

Brilhart, John K. *Effective Group Discussion*. Dubuque, Iowa: Wm C. Brown Co., 1982, 332 p.

British Columbia. Department of Labour. Research Branch. *Technological Change Provisions in British Columbia Collective Agreements*. Victoria, B.C.: British Columbia Department of Labour, 1968, 24 p.

Canada. Department of Communications; Booth, Peter J.; Plowright, Teresa I. *A Study on the Social Impact of Office Automation*. Ottawa, Ontario: Department of Communications, December 1982, 180 p. + appendices.

Canadian Union of Public Employees. *The Status of Women in CUPE/ La situation de la femme dans le SCFP*. 21 Florence Street, Ottawa, Ont. K2P 0W6: CUPE, 1971, 35 p.

Cartwright, Dorwin; Zander, Alvin. *Group Dynamics: Research and Theory*. 49 East 33rd Street, New York, N.Y. 10016: Harper & Row, Publishers, 1968, 580 p.

Cecil, Paula B. *Word Processing in the Modern Office*. 2727 Sand Hill Road, Menio Park, California 94025: The Benjamin/Cummings Publishing Company, Inc., 1980, 350 p.

Cohen, Marcy and Margaret White. *Taking Control of Our Future: Clerical Workers and New Technology*, Vancouver, British Columbia: Press Gang Printers and Publishers Limited, 1987, 178 p.

Craven, Paul; Littleton, James. *Technological Change and the Workforce*. 252 Bloor Street West, Toronto, Ont. M5S 1V6: The Ontario Institute for Studies in Education, 1978, 64 p.

Davis, P.F.; Stevenson, J.H.; Suttie, I.P. *Office Automation: Its Impact on People, Processes and Procedures. Selected Resources*. London, Ontario N6A 5C2: Department of Secretarial and Administrative Studes, The University of Western Ontario, November 1982.

Dight, Janet. *Breaking the Secretary Barrier*, Toronto: PaperJacks Ltd., 1987, 340 p.

Dumas, Marie-Claire. *Women and Computers: Current Situation and Prospects for Future Action*. Laval, Quebec: Canadian Workplace Automation Research Centre, Department of Communications, 1985, 108 p.

Economic Council of Canada. *Making Technology Work, Innovation and Jobs in Canada*. Ottawa: Canadian Government Publishing Centre, 1987, 39 p.

European Trade Union Institute. *The Impact of Microelectronics on Employment in Western Europe in the 1980's*. Boulevard de l'Imperatrice, 66, 1000 Bruxelles: Gunter Kopke, ETUI, 1980, 164 p.

Forester, Tom. *The Microelectronics Revolution. The Complete Guide to the New Technology and Its Impact on Society*. 5 Alfred Street, Oxford 0X1 4H8, England: Basil Blackwell Publisher, 1980, 589 p.

Greenbaum, Joan. *The Effects of Office Automation on the Public Sector Workforce: A Case Study*, Washington, D.C. Office of Technology Assessment, 1985.

Hiltz, Starr Roxanne. *Online Communities: A Case Study of the Office of the Future*. Norwood, New Jersey 07648: Ablex Publishing Corporation, 1984, 261 p.

Hiltz, Starr Roxanne. *Communications and Group Decision-Making: Experimental Evidence on the Potential Impact of Computer Conferencing*. 323 High Street, Newark, New Jersey 07102: Computerized Conferencing and Communications Center, New Jersey Institute of Technology, Research Report Number Two, September 1975, 105 p.

Hiltz, Starr Roxanne; Turoff, Murray. *The Network Nation: Human Communication via Computer*. Reading, Massachusetts: Addison-Wesley Publishing Company, Inc., 1978, 528 p.

Hines, Colin; Searle, Graham. *Automatic Unemployment*. 40 James Street, London, U.K. W1M 5HS: Earth Resources Research Ltd., 1979, 77 p.

Honeywell Inc.; Response Analysis Corporation. *Office Automation and the Workplace. A National Survey of Managers and Secretaries*. Minneapolis, Minn. 55408: Honeywell Inc., March 1983.

Jones, Trevor. *Microelectronics and Society*. 12 Cofferidge Close, Stony Stratford, Milton Keynes MK11 1BY, England: The Open University Press, 1980, 174 p.

Kanter, Rosabeth Moss. *Men and Women of the Corporation*. New York: Basic Books, 1977, 348 p.

Landau, Robert M. et al. *Emerging Office Systems*. Norwood, Jew Jersey: Ablex Publishing Corporation, 1982, 344 p.

Menzies, Heather. *Computers on the Job: Surviving Canada's Microcomputer Revolution*. Egerton Ryerson Memorial Building, 35 Britain Street, Toronto, Ontario M5A 1R7: James Lorimer & Company, Publishers, 1982, 162 p.

Menzies, Heather. *Women and the Chip*. Case Studies of the effects of informatics on employment in Canada. Montreal: Institute for Research on Public Policy, 1981.

Norman, Colin. *Microelectronics at Work: Productivity and Jobs in the World Economy. Worldwatch Paper 39*. 1776 Massachusetts Avenue, N.W., Washington D.C. 20036: Worldwatch Institute, October 1980, 63 p.

Peitchinis, Stephen G. *Computer Technology and Employment: Retrospect and Prospect*. London: MacMillan Press, 1983, 191 p.

Queen's University, Kingston. Department of Sociology. *Workshop. Microelectronics--Information Technology and Canadian Society*. Kingston, Ont.: Queen's University, 1982, unpaged (10 papers).

Robinson, John P.; Athanasiou, Robert; Head, Kendra B. *Measures of Occupational Attitudes and Occupational Characteristics (Appendix A to Measures of Political Attitudes.)* Survey Research Center, Institute for Social Research, 1969, 460 p.

Rylett, Dave; The University of Western Ontario, Social Science Computing Laboratory. *Impact of Technology Study: Analysis*. London, Canada: The University of Western Ontario, April, 1987.

Selitz, Claire; Jahoda, Marie; Deutsch, Morton; Cook, Stuart W. *Research Methods in Social Relations*. New York: Holt, Rinehart & Winston, 1964, 622 p.

Uhlig, Ronald P.; Farber, David J.; Bair, James H. *The Office of the Future: Communication and Computers*. Amsterdam; New York: North-Holland Publishing Company, 1979.

Warner, Malcolm, ed. *Microprocessors, Manpower and Society: A Comparative, Cross-National Approach*. Gower House, Croft Road, Aldershot, hants GU11 3HR, England: Gower Publishing Company, 1984, 367 p.

Working Women, National Association of Office Workers. *Race Against Time: Automation of the Office. An Analysis of the Trends in Office Automation and the Impact on the Office Workforce*. 1244 Huron Road, Cleveland, Ohio 44115: Working Women, National Association of Office Workers, 1980. 31 p.

Articles and Parts of Books

"What do People do at Work?," *Design*, April 1983, (412): 44-46.

"Labour Department Takes Hard Look at Impact of Office Automation on Women Workers," *The Secretary*, January 1986, 46 (1): 15.

"Computer for Secretaries May Change Job Function," *Canadian Secretary*, March 1985, 9 (5): 11.

"Computers Open New Vistas," *Canadian Secretary*, March 1985, 9 (5): 14-15.

"Upgraded Skills Grow in Demand," *Canadian Secretary*, March 1985, 9 (5): 34.

Abdel-Halim, Ahmed A. "Effects of Role Stress-Job Design-Technology Interaction on Employee Work Satisfaction," *Academy of Management Journal*, June 1981, 24 (2): 260-273.

Agocs, Carol. "Missing Persons: Perspectives on the Absence of Women from Canada's Corporate and Bureaucratic Elites," in Liddell, William, ed., *Proceedings of the Annual Conference of the Administrative Sciences Association of Canada, Organizational Behaviour Division, University of Montreal, May 27-29, 1985*. Administrative Sciences Association of Canada, 1985, p. 1-12.

Atkinson, Pat. "Gaining the Edge with PCs," *Canadian Secretary*, March 1985, 9 (5): 8-10.

Bass, Marshall B. "The Changing Secretary," *The Secretary*, May 1986, 46 (5): 3.

Beer, Michael; Spector, Bert A. "Managing Human Assets--It's Time for New Thinking," *Office Administration and Automation*, March 1985, 46 (3): 26-29, 60.

Bjorn-Adnersen, Niels. "The Changing Roles of Secretaries and Clerks," in Otway, Harry J.; Peltu, Malcom, eds., *New Office Technology: Human and Organizational Aspects*. 5 Dryden Street, London, U.K. WC2E 9NW: France Pinter (Publishers) for the Commission of the European Communities, 1983, p. 120-137.

Brief, Arthur P.; Aldag, Ramon J. "The Job Characteristic Inventory: An Examination," *Academy of Management Journal*, December 1978, 21 (4): 659-670.

Cheney, Paul H.; Dickson, Gary W. "Organizational Characteristics and Information Systems: An Exploratory Investigation," *Academy of Management Journal*, March 1982, 25 (1): 170-184.

Connell, John J. "The People Factor in the Office of the Future," *Administrative Management*, January 1980, 3 p. Reprint in Office Technology Research Group Library, HP 145, Pasadena, CA.

Connell, John J. "The Future Office: New Technologies, New Career Paths," *Personnel*, July-August 1983, p. 23-32. Reprinted by Office Technology Research Group.

Culnan, Mary J.; Bair, James H. "Human Communication Needs and Organizational Productivity: The Potential Impact of Office Automation," *Journal of the American Society for Information Science*, May 1983, 34 (3): 215-221.

Davies, Annette. "Management-Union Participation During Microtechnological Change," in Warner, Malcolm, ed., *Microprocessors, Manpower and Society: A Comparative, Cross-National Approach*. Gower House, Croft Road, Aldershot, Hants GU11 3HR, England: Gower Publishing Company, 1984, p. 149-170.

Deacon, Doreen. "The Effects of Automation on the Secretarial Role," *Memo*, January, 1987, 11 (2): 8-9, 11.

Dickey, S. "Editorial," *Words*, August-September, 1982, 4 p.

Downey, H. Kirk; Sheridan, John E.; Slocum, John W. Jr., "Analysis of Relationships Among Leader Behaviour, Subordinate Job Performance and Satisfaction: A Path-Goal Approach," *Academy of Management Journal*, June 1975, 18 (2): 253-262.

Driscoll, James W. "People and the Automated Office," no date, 4 p. Reprint in Office technology Research Group Library, HP 141, Pasadena, CA.

Driscoll, James W. "How to Humanize Office Automation," *Office: Technology and People*, Vol. 1, 1982, pp. 167-176.

Duff, Thomas B.; Merrier, Patricia A. "Secretaries: Caught in the Past?," *Management World*, October 1984, 13 (9): 8-11.

Dunn, Nina. "The Office of the Future – Part 1," *Computer Decisions*, July 1979, 11 (7): 16-19, 23, 26. Part II appears in 11 (8): 68-69, 71-71, 74-75, August 1979.

Eisler, Riane; Loye, David. "Will Women Change the World?," *Futures*. Butterworth & Co. (Publishers) Ltd., October 1985, 17 (5): 550-555.

Elam, Philip G. "Human Considerations," *ComputerWorld*, 6 p. Reprint in Office Technology Research Group Library, HP 146, Pasadena, CA.

Erez, Miriam; Earley, P. Christopher; Hulin, Charles L. "The Impact of Participation on Goal Acceptance and Performance: A Two-Step Model," *Academy of Management Journal*, March 1985, 28 (1): 50-66.

Evans, John. "The Worker and the Workplace," in Friedrichs, Gunter; Schaff, Adam, eds., *Microelectronics and Society: For Better or For Worse. A Report to the Club of Rome*. Headington Hill Hall, Oxford 0X3 08W, England: Pergamon Press Ltd., 1982, p. 157-187.

Fenelon, Mary E. "View from the Top – Women Bring a New Perspective to the Workforce," *Management World*, June, 1980, pp 1, 30.

Ferratt, Thomas W.; Dunham, Randall B.; Pierce, Jon L. "Self-Report Measures of Job Characteristics and Affective Responses: An Examination of Discriminant Validity," *Academy of Management Journal*, December 1981, 24 (4): 780-794.

Ford, Bill. "Technology, Women and Employment: The Australian Experience," in Warner, Malcolm, ed., *Microprocessors, Manpower and Society: A Comparative, Cross-National*

Approach. Gower House, Croft Road, Aldershot, Hants GU11 3HR, England: Gower Publishing Company, 1984, p. 339-348.

Freudberg, Frank. "Showdown at the OA Corral," *Words*, June-July 1985, 14 (1): 34-35.

Fusselman, Kay. "Do Computer Skills Mean Higher Pay, Better Jobs," *The Secretary*, June/July 1986, 46 (6): 14-22.

Fusselman, Kay. "Do Computer Skills Mean Higher Pay, Better Jobs? Technology's Effect on Secretaries is Similar Throughout the World,' *The Secretary*, November/December 1986, 46 (9): 6-7.

Gaimon, Cheryl. "The Optimal Acquisition of Automation to Enhance the Productivity of Labor," *Administrative Science Quarterly*, September 1985, 31 (9): 1175-1190.

Gayman, Arden. "Profile of the Secretary," *Canadian Secretary*, March 1985, 9 (5): 17.

Giles, William F.; Feild, Hubert S. "The Relationship of Satisfaction Level and Content of Job Satisfaction Questionnaire Items to Item Sensitivity," *Academy of Management Journal*, June 1978, 21 (2): 295-301.

Giles, William F.; Holley, William H., Jr. "Job Enrichment versus Traditional Issues at the Bargaining Table: What Union Members Want," *Academy of Management Journal*, December 1978, 21 (4): 725-730.

Ginzberg, Eli. "The Mechanization of Work," *Scientific American*, September 1982, 247 (3): 67-75.

Giuliano, Vincent E. "The Mechanization of Work," *Scientific American*, September 1982, 247 (3): 149-152, 154, 158, 160, 162-164.

Golembiewski, Robert T.; Yeager, Samuel. "Testing the Applicability of the JDI to Various Demographic Groupings," *Academy of Management Journal*, September 1978, 21 (3): 514-519.

Gordon, Michael E.; Arvey, Richard D. "The Relationship Between Education and Satisfaction With Job Content," *Academy of Management Journal*, December 1975, 18 (4): 888-892.

Griffin, Ricky W. "A Longitudinal Investigation of Task Characteristics Relationships," *Academy of Management Journal*, March 1981, 24 (1): 99-113.

Griffin, Ricky W.; Moorhead, Gregory; Johnson, Bruce H.; Chonko, Lawrence B. "The Empirical Dimensionality of the Job Characteristic Inventory," *Academy of Management Journal*, December 1980, 23 (4): 772-777.

Grossman, Rachael. "Women's Place in the Integrated Circuit," *Southeast Asia Chronicle – Pacific Research*. Berkeley, California, January-February 1979, 9 (5): 2-17.

Harris, Marjorie. "Redressing the Balance," *Canadian Business*, June 1981, p. 53-56, 59, 61.

Haskell, Jean R. "Women: Blocked by Corporate Politics?," *Management World*, October 1985, 14 (9): 13-15.

Hatfield, John D.; Huseman, Richard C. "Perceptual Congruence about Communication as Related to Satisfaction: Moderating Effects of Individual Characteristics," *Academy of Management Journal*, June 1982, 25 (2): 349-358.

Heitman, J.A. "Studying Secretaries [letter]," *Management World*, February 1985, 14 (2): 6.

Hingel, Anders J. "A Promethean Change of Industrial Relations: A Comparative Study of Western European Unions and Technological Developments," in Warner, Malcolm, ed., *Microprocessors, Manpower and Society: A Comparative, Cross-National Approach*. Gower House, Croft Road, Aldershot, Hants GU11 3HR, England: Gower Publishing Company, 1984, p. 255-272.

Hoos, Ida Russakoff. "When the Computer Takes Over the Office," *Harvard Business Review*, July-August 1960, 38 (4): 102-112.

Horne, J.H.; Lupton, Tom. "The Work Activities of 'Middle' Managers – An Exploratory Study," *Journal of Management Studies*, February 1965, 2 (1): 14-33.

Hulin, Charles L. "Individual Differences and Job Enrichment – The Case Against General Treatments," in Maher, John R., ed., *New Perspectives in Job Enrichment*. 450 West 33rd Street, New York, New York 10001: Van Nostrand Reinhold Company, 1971, p. 158-191.

Janson, Robert. "Job Enrichment in the Modern Office," in Maher, John R., ed., *New Perspectives in Job Enrichment*. 450 West 33rd Street, New York, New York 10001: Van Nostrand Reinhold Company, 1971, p. 90-112.

Kleiner, Brian H. "Managing Yourself," *Management World*, February, 1980, pp. 17, 18, 36.

Kraft, W. Philip, Jr. "Job Enrichment for Production Typists – A Case Study," in Maher, John R., ed., *New Perspectives in Job Enrichment*. 450 West 33rd Street, New York, New York 10001: Van Nostrand Reinhold Company, 1971, p. 114-128.

Lee, D.J. "Skill, Craft and Class: A Theoretical Critique and a Critical Case," *Sociology*, February 1981, 15 (1): 56-78.

Lee, H.C. "Do Workers Really Want Flexibility on the Job?," *Personnel*, March-April 1965, 42 (2): 74-77.

Leontief, Wassily W. "The Distribution of Work and Income," *Scientific American*, September 1982, 247 (3): 188-190, 192, 194-195, 198-199, 202-204.

Levine, Gilbert. "Prospects for Industrial Democracy in Canada," in Lowe, Graham S. and Harvey J. Krahn, eds., *Working Canadians, Readings in the Sociology of Work and Industry*, Agincourt, Ontario, Canada: Methuen Publications, 1984, pp. 212-216.

Littman, Deborah. "Micro-chip Technology and its Impact on Women's Work," Communist Viewpoint. 71 Bathurst Street, Toronto, Ontario M5G 2PG: Progress Books, Spring 1982, 14 (1): 7-13.

Long, Richard J. "Microelectronics and Quality of Working Life in the Office: A Canadian Perspective," in Warner, Malcolm, ed., *Microprocessors, Manpower and Society: A Comparative, Cross-National Approach*. Gower House, Croft Road, Aldershot, Hants GU11 3HR, England: Gower Publishing Company, 1984, p. 273-293.

Lopez, Elsa M. "A Test of the Self-Consistency Theory of the Job Performance-Job Satisfaction Relationship," *Academy of Management Journal*, June 1982, 25 (2): 335-348.

Magnus, Margaret. "Office Automation, Personnel and the New Technology," *Personnel Journal*, 1980, 4 p. Reprint in Office Technology Research Group Library, HP 159, Pasadena, CA.

Mankin, Don; Bikson, Tora K.; Gutek, Barbara. "The Office of the Future: Prison or Paradise?," *The Futurist*, June 1982, 16 (3): 33-36.

Marenco, Claudine. "The Effects of the Rationalization of Clerical Work on the Attitudes and Behaviour of Employees," in Stieber, Jack, ed., *Employment Problems of Automation and Advanced Technology, An International Perspective*. London (U.K.): MacMillan, 1966, p. 412-430.

Mason, Janet. "Opportunities for Women," *Management World*, October 1985, 14 (9): 16-17.

Mitchell, Terence R.; Smyser, Charles M.; Weed, Stan E. "Locus of Control: Supervision and Work Satisfaction," *Academy of Management Journal*, September 1975, 18 (3): 623-631.

Muchinsky, Paul M. "Organizational Communication: Relationships to Organizational Climate and Job Satisfaction," *Academy of Management Journal*, December 1977, 20 (4): 592-607.

Ness, David. "Office Automation Today and Tomorrow," EDUCOM. *Bulletin of the Interuniversity Communications Council*, Fall 1977, 12 (3): 2-12.

Newman, John E. "Development of a Measure of Perceived Work Environment (PWE)," *Academy of Management Journal*, December 1977, 20 (4): 520-534.

Noll, D.; Bradburn, N. "Work Satisfaction and Personal Happiness (Noll and Bradburn 1968)," in Robinson, John P.; Athanasiou, Robert; Head, Kendra B., eds., *Measures of Occupational Attitudes and Occupational Characteristics*. Ann Arbor, Michigan: Survery Research Center, Institute for Social Research, February 1969, p. 142-143.

O'Reilly, Charles, III; Parlette, G. Nicholas; Bloom, Joan R. "Perceptual Measures of Task Characteristics: The Biasing Effects of Differing Frames of Reference and Job Attitudes," *Academy of Management Journal*, March 1980, 23 (1): 118-131.

Odewahn, Charles A.; Petty, M.M. "A Comparison of Levels of Job Satisfaction, Role Stress, and Personal Competence Between Union Members and Nonmembers," *Academy of Management Journal*, March 1980, 23 (1): 150-155.

Peccei, Riccardo; Guest, David. "Evaluating the Introduction of New Technology: The Case of Word Processors in British Rail," in Warner, Malcolm, ed., *Microprocessors, Manpower and Society: A Comparative, Cross-National Approach*. Gower House, Croft Road, Aldershot, Hants GU11 3HR, England: Gower Publishing Company, 1984, p. 84-109.

Peitchinis, Stephen G. "Microelectronic Technology and Employment: Micro and Macro Effects," in Queen's University at Kingston. Department of Sociology, Workshop: *Microelectronics – Information Technology and Canadian Society*. May 5-7, 1982. Kingston, Ont.: Queen's University, 1982, 30 p.

Pierce, Jon L.; Dunham, Randall B. "The Measurement of Perceived Job Characteristics: The Job Diagnostic Survey versus the Job Characteristics Inventory," *Academy of Management Journal*, March 1978, 21 (1): 123-128.

Rajan, Amin. "Office Technology and Clerical Skills," *Futures*. Surrey, U.K.: Butterworth & Co (Publishers) Ltd, August 1985, 17 (4) 410-413.

Regan, Elizabeth A. "Job Descriptions and Career Paths in Office Automation and End-User Computing," *Office Systems Research Journal*, Fall 1986, 5 (1): 9-36.

Rosenfield, Rachel A. "Women's Employment Patterns and Occupational Achievements," *Social Science Research*, 1978, 7: 61-80.

Saleh, S.D.; Hosek, James. "Job Investment: Concepts and Measurements," *Academy of Management Journal*, June 1976, 19 (2): 213:224.

Sargent, James F.; Miller, Gerald R. "Some Differnces in Certain Communication Behaviors of Autocratic and Democratic Group Leaders," *Journal of Communication*, September 1971, 21: 233-252.

Schrami, Mary L. "The Psychological Impact of Automation on Library and Office Workers," *Special Libraries*, April 1981, 72 (2): 149-156.

Sims, Henry P., Jr.; Szilagyi, Andrew D.; Keller, Robert T. "The Measurement of Job Characteristics," *Academy of Management Journal*, June 1976, 19 (2): 195-212.

Sorensen, Billie. "The Professional Secretary: Key Asset of the Manager's Team," *The Business Quarterly*, August 1974, p. 62-75.

Stead, Bette Ann. "Women in Management – Some Progress, But More is Needed," *Office Administration and Automation*, August 1985, 46 (8): 24-27, 57.

Stevenson, Janet H. "Personnel Management: Myths and Realities in the Selection and Function of Secretarial Personnel," *Personnel Journal*, February 1981, 60 (2): 114-117.

Stewart, Jon. "Computer Shock: The Inhuman Office of the Future," *Saturday Review*, June 23, 1979, p. 14-17. Reprint in Office Technology Research Group Library, HP 134, Pasadena, CA.

Stout, Vickie Johnson; Taylor, Helen W. "Identification of Technical, Human and Conceptual Skills Needed by Clerical, Managerial, and Professional Employees Who Use Information Technology," *Office Systems Research Journal*, Spring 1983, 1 (2): 25-32.

Sundstrom, Eric; Burt, Robert E.; Kamp, Douglas. "Privacy at Work: Architectural Correlates of Job Satisfaction and Job Performance," *Academy of Management Journal*, March 1980, 23 (1): 101-117.

Wallach Scott, Joan. "The Mechanization of Women's Work," *Scientific American*, September 1982, 247 (3): 167-169, 171-172, 175-176, 178, 182, 184, 187.

Walsh, Vivien. "The Post Office, the Unions and the New Technology," in Warner, Malcolm, ed., *Microprocessors, Manpower and Society: A Comparative, Cross-National Approach*. Gower House, Croft Road, Aldershot, Hants GU11 3HR, England: Gower Publishing Company, 1984, p. 210-223.

Warskett, George. "The Revolution in Microelectronics: Prospect for Social Transformation," in Queen's University at Kingston. Department of Sociology, *Workshop: Microelectronics – Information Technology and Canadian Society*. May 5-7, 1982. Kingston, Ont.: Queen's University, 1982, 39 p. + bibliography.

Weaver, Charles N. "Job Preferences of White Collar and Blue Collar Workers," *Academy of Management Journal*, March 1975, 18 (1): 167-175.

Yeager, Samuel J. "Dimensionality of the Job Descriptive Index," *Academy of Management Journal*, March 1981, 24 (1): 205-212.

Unpublished Material

Adjebeng-Asem, Selina. "Technological Change and Clerical Job Distribution in Canada, 1911-1971." M.A. Thesis, University of British Colmbia, 1980. Canadian Thesis order no.: 49882.

Grusec, T. "Employment Effects of Information Technology." Paper presented at the International Seminar on Technology, Innovation and Social Change, Carleton University – University of Edinburgh, Ottawa, Ontario, October 26, 1984, 10 p. OCS Program, Department of Communications, Government of Canada.

Regan, Elizabeth Ann. "Behavioral and Organizational Issues of Office Automation Technology." Ph.D. Dissertation, University of Connecticut, 1982, 249 p.